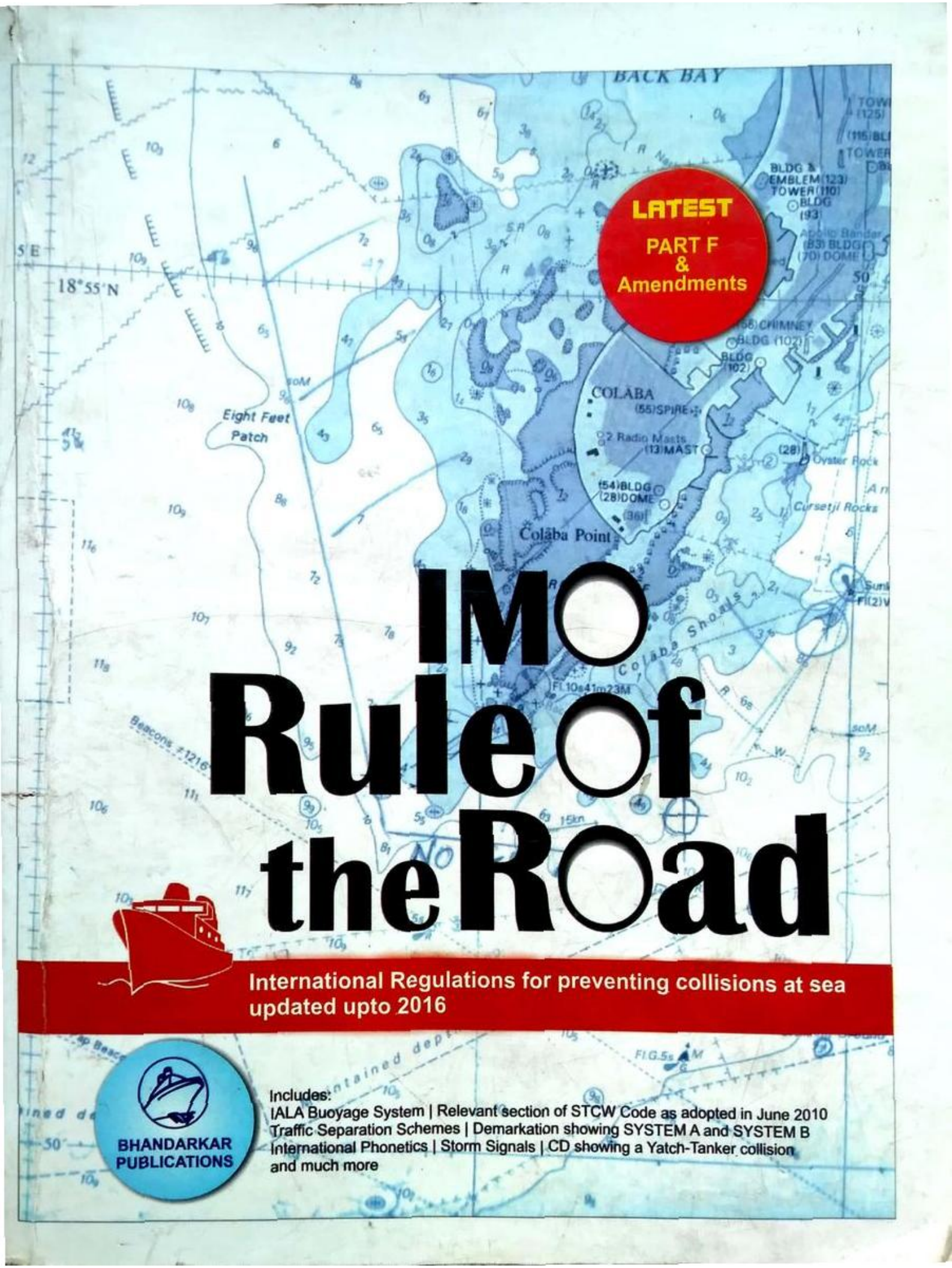



Scanned by CamScanner

# RULE OF THE ROAD

International Regulations

FOR

Preventing Collisions at Sea

Watch-keeping regulations Buoyage marking
Distress, Lifeboat signals

Traffic Separation Schemes – A Synopsis

**BHANDARKAR PUBLICATIONS,**
**MUMBAI**



Scanned by CamScanner

*Dedicated*

*to*

*Safety*

*of*

*Life,*

*Ship,*

*and*

*Cargo.*

1st edition Jan. 1975
13th edition April. 2012
3rd reprint October 2013
4th reprint June 2014
5th reprint July 2015
6th reprint August 2015
14th edition August 2016

Price : Rs. 375/- (With free CD)

---

Published by:

**Capt. V. K. Bhandarkar**
**M/s. BHANDARKAR PUBLICATIONS**
10, Hammersmith Industrial Premises,
S.T. Road, Mahim, Mumbai-400016.
Tel.: 24444248, 40764200 (100 lines)
e-mail addresses: mktg@bhandarkarpub.com
www.bhandarkarpub.com



Scanned by CamScanner

# PUBLISHER'S NOTE

**RULE OF THE ROAD** is officially called The International Convention for Preventing Collisions at sea 1972. It is also called 'Colregs' in the abbreviated form but in more popular terms it is called 'Rule of the Road' or even abbreviated as 'ROR'

How are Rules made for navigation at sea called **Rule of the Road**. Well the explanation is simple. Rules for navigation of vessels are similar to rules of manoeuvring Vehicles on road. There are no roads at sea. So having to make rules for vessels to perform while out at sea is a daunting task. Even after decades of Rules of Road (Colregs) being in place and accepted internationally we still find collisions taking place for whatever reasons. Reasons could be so many, such as inadequate manning, Fatique of watch keeper, misunderstanding of the intention of other vessel, misunderstanding the equipment on board or even breakdown of the navigational aid. In recent times several collisions and "near miss" situations have even occurred at the mouth of port entrance and/or traffic separation schemes due to reluctance to manage speed, over-reliance on electronic aids and just plain poor seamanship, among many others. A recent culture among young navigators, though unhealthy and should be discouraged, is to use the VHF to take decisions on basis of conversations with the other vessel rather than to "just follow the rule".

The impression from various studies is obviously that the ROR is not being adhered to. Implying ROR is not being completely understood. In several MARS reports of **Seaways,** an authority in these matters has confirmed that 74% of reported incidents related to uncertainty, violations and disregard to ROR.

Rules of the Road or ROR is a very elementary term and does not require any specialised knowledge to know that these rules are backed by a convention. Needless to say, rules of the road refer to those laws and regulations which are necessary to maintain vessel traffic discipline and ensure safety of life.

In context of ships which sail in vast oceans and seas where there are no concrete roads, Collision avoidance rules have to be followed by the marine vessels.

In total there are forty one rules in six parts (A, B, C, D, E and F) which refer to the rules relating to General, Steering and Sailing, Light & Shapes, Sound and Light Signals, Exemptions and Verification of compliance respectively. (See back side of Cover)

There are only three types of sound-signal equipment mentioned in the Rules - whistle, bell, and gong, with the latter only required on vessels 100 meters or more in length. As with everything else, the specifications of the equipment are prescribed in the rules. The whistle and gong are used by larger vessels when anchored in poor visibility in addition to the normal sound signals.

- A 'short blast' is a signal on the foghorn (or whistle) of about one second duration.
- A 'long blast' is of four to six second duration

When moving, a ship may use the following basic signals to contact other ships

- One short blast – I am turning to starboard (my right)
- Two short blasts – I am turning to port (my left)
- Three short blasts – I am going astern (backwards)
- One long blast – I am moving (usually used in fog or at blind turns)
- One long blast followed by two short ones – I am not under command
- Five short rapid blasts – "Please indicate your intentions" (also used to say 'what are you doing?')



Scanned by CamScanner

These rules are applicable to all class of ship including yachts, small boats, diving vessels, pleasure craft and even naval crafts and crafts undergoing special operations at sea, Seaplanes etc. These rules also cover lights and shapes a vessel must show by night/day

A thorough knowledge of the Rules of the Road is essential for practical navigation as well as for passing the various exams and certifications relating to navigation since they are applicable to all types of ships.

Rules are rules, and hence even for marine vessels remaining in inland waters, these rules are made by local authorities but they must be in confirmation by the outline laid out by the IMO ROR and cannot differ totally from them. Similarly there could be a slight variation of these rules while applying them to specific ship types and shapes such as for example naval aircraft carrier ships, dredgers, minesweepers, Platform support vessels and so forth.

Vessels are navigated by personnel coming from varied socio economic, cultural demographical backgrounds. Hence following of these rules 'by the book' is of utmost relevance. It has been often said that rules need to be followed more 'in the spirit' rather than 'in the letter'. There is a rule "Rule 2 – Responsibility" which is an all so important rule also called the "Rule of Good Seamanship". It reinforces the point that the customary practices of good seamanship must be followed, specially when there are special circumstances, when it allows a departure from the strict language of the Rules to avoid immediate danger – the avoidance of collision being of prime importance. Strict literal compliance with the ROR may not be a defence if a collision occurs.

The rules primarily lay down the responsibilities between vessels when they meet at sea, i.e. which vessel should keep out of the way of the other (the give way vessel) and which should do nothing except maintain its course and speed (the stand on vessel). This responsibility also extends to type of vessels in the encounter when a risk of collision may exist eg. a normal power driven merchant ship should keep out of the way of a vessel restricted in her ability to manoeuvre.

Sometimes a vessel may be severely restricted in her manoeuvrability because of specialised or complicated task she is performing which could be cable laying, survey, minesweeping and so forth and such a vessels is known as the "**vessel restricted in her ability to manoeuvre**".

All of the above and much more are being discussed in this publication. We have provided several pictures for easy understanding of the rules. As it is commonly known "pictures speak a million words".

In this edition we have provided simple explanation to otherwise complicated connotation to every rule with cross reference to other rules wherever necessary.

In addition we are providing a free CD containing movies of near miss situations. These near miss situations have avoided major tragedy to life, environment and property also avoided legal costs that would have been incurred by way of court cases. Courts usually tend to blame both parties for some fault or the other. It means further loss of probable insurance claims not to mention the huge loss to a company's track record. What generally happens to the mariners directly involved in the unfortunate incident is 'psychological breakdown' or even being debarred from further sailing by virtue of having their certificates cancelled.

We are open to suggestions for the improvement of this book. These have been incorporated. We also thank so many well wishers Internationally who have appreciated this edition. We wish young Navigators many safe voyages.

**Capt. Vivek K. Bhandarkar**



Scanned by CamScanner

# CONTENTS

## INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA, 1972

### CHAPTER I


Page

**PART A - GENERAL**

Rule 1 Application ..... 2
Rule 2 Responsibility ..... 3
Rule 3 General Definitions ..... 5

**PART B - STEERING AND SAILING RULES**

**Section I - Conduct of vessels in any condition of visibility**

Rule 4 Application ..... 9
Rule 5 Look-out ..... 9
Rule 6 Safe Speed ..... 10
Rule 7 Risk of Collision ..... 13
Rule 8 Action to Avoid Collision ..... 14
Rule 9 Narrow Channels ..... 16
Rule 10 Traffic Separation Schemes ..... 18

**Section II - Conduct of vessels in sight of one another**

Rule 11 Application ..... 21
Rule 12 Sailing Vessels ..... 21
Rule 13 Overtaking ..... 22
Rule 14 Head-on Situation ..... 24
Rule 15 Crossing Situation ..... 25
Rule 16 Action by Give-way Vessel ..... 26
Rule 17 Action by Stand-on Vessel ..... 26
Rule 18 Responsibilities between Vessels ..... 28

**Section III - Conduct of vessels in restricted visibility**

Rule 19 Conduct of Vessels in Restricted Visibility ..... 31

**PART C - LIGHTS AND SHAPES**

Rule 20 Application ..... 33
Rule 21 Definitions ..... 34
Rule 22 Visibility of Lights ..... 36
Rule 23 Power-Driven Vessels Underway ..... 37




Scanned by CamScanner

Rule 24 Towing and Pushing ..... 41
Rule 25 Sailing Vessels Underway and Vessels Under Oars ..... 50
Rule 26 Fishing Vessels ..... 53
Rule 27 Vessels not Under Command or Restricted in their Ability to Manoeuvre ..... 58
Rule 28 Vessels Constrained by their Draught ..... 66
Rule 29 Pilot Vessels ..... 67
Rule 30 Anchored Vessels and Vessels Aground ..... 68
Rule 31 Seaplanes ..... 71

**PART D - SOUND AND LIGHT SIGNALS**

Rule 32 Definitions ..... 73
Rule 33 Equipment for Sound Signals ..... 73
Rule 34 Manoeuvring and Warning Signals ..... 74
Rule 35 Sound Signals in Restricted Visibility ..... 77
Rule 36 Signals to Attract Attention ..... 79
Rule 37 Distress Signals ..... 80

**PART E - EXEMPTIONS**

Rule 38 Exemptions ..... 81

**PART F - VERIFICATION OF COMPLIANCE WITH THE PROVISIONS OF THE CONVENTION**

Rule 39 Definitions ..... 82
Rule 40 Application ..... 82
Rule 41 Verification of compliance ..... 82

**ANNEX I**

POSITIONING AND TECHNICAL DETAILS OF LIGHTS AND SHAPES

1. Definition ..... 84
2. Vertical positioning and Spacing of Lights ..... 84
3. Horizontal Positioning and Spacing of Lights ..... 85
4. Details of Location of Direction-Indicating Lights for Fishing Vessels, Dredgers and Vessels Engaged in Underwater Operations ..... 86
5. Screen for Sidelights ..... 86
6. Shapes ..... 86
7. Colour Specification of Lights ..... 86
8. Intensity of Lights ..... 87
9. Horizontal Sectors ..... 88
10. Vertical Sectors ..... 88
11. Intensity of Non-Electric Lights ..... 88
12. Manoeuvring Light ..... 88
13. High Speed Craft ..... 89
14. Approval ..... 89



Scanned by CamScanner

**ANNEX II**

ADDITIONAL SIGNALS FOR FISHING VESSELS FISHING IN CLOSE PROXIMITY

1. General ..... 90
2. Signals for Trawlers ..... 90
3. Signals for Purse Seiners ..... 90

**ANNEX III**

TECHNICAL DETAILS OF SOUND SIGNAL APPLIANCES

1. Whistles ..... 91
2. Bell or Gong ..... 93
3. Approval ..... 93

**ANNEX IV**

DISTRESS SIGNALS ..... 94

**CHAPTER II**

IMO guidance for uniform application of certain Rules ..... 96

**CHAPTER III**

Relevant Section STCW of 78 adopted at Manila, June 2010 ..... 98

**General provisions**

Regulation 1 - Definitions and clarifications ..... 98
Regulation 2 - Certificates and endorsements ..... 101
Regulation 3 - Principles governing near-coastal voyages ..... 103
Regulation 4 - Control procedures ..... 104
Regulation 5 - National provisions ..... 105
Regulation 6 - Training and assessment ..... 106
Regulation 7 - Communication of information ..... 106
Regulation 8 - Quality standards ..... 107
Regulation 9 - Medical standards ..... 107
Regulation 10 - Recognition of certificates ..... 108
Regulation 11 - Revalidation of certificates ..... 109
Regulation 12 - Use of simulators ..... 110
Regulation 13 - Conduct of trials ..... 110
Regulation 14 - Responsibilities of companies ..... 111
Regulation 15 - Transitional provisions ..... 112

**CHAPTER IV**

**Master and deck department**

Regulation 1 - Mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more ..... 113
Regulation 2 - Mandatory minimum requirements for certification of masters and chief mates on ships of 500 gross tonnage or more ..... 114



Scanned by CamScanner

Regulation 3 - Mandatory minimum requirements for certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage ..... 114
Regulation 4 - Mandatory minimum requirements for certification of ratings forming part of a navigational watch ..... 116
Regulation 5 - Mandatory minimum requirements for certification of ratings as able seafarer deck ..... 116

## CHAPTER V

**Radiocommunication and radio operators**

Regulation 1 - Application ..... 118
Regulation 2 - Mandatory minimum requirements for certification of GMDSS radio operators .... 118

## CHAPTER VI

**Standards regarding special training requirements for personnel on certain types of ships**

Regulation 1-1 - Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on oil and chemical tankers ..... 120
Regulation 1-2 - Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on liquefied gas tankers ..... 121
Regulation 2 - Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships ..... 122

## CHAPTER VII

**Watchkeeping**

Regulation 1 - Fitness for duty ..... 124
Regulation 2 - Watchkeeping arrangements and principles to be observed ..... 124

## CHAPTER VIII

Traffic Separation schemes ..... 126
Traffic separation schemes - A Synopsis ..... 145

## CHAPTER IX

**International buoyage marking ..... 150**
Chart showing Region A & B - Prefered / Secondary Channel
Chart showing demarkation of Region A & B

## CHAPTER X

A. Alphabetical Flag and Meaning of Flags ..... 166
Aphabetical Flags, Numeral Pendants, Substitutes ..... 167
B. Flag codes ..... 168
C. Morse Signals ..... 169
D. International Phonetics ..... 170

## Extracts of STCW Code, 2010 MANILA

**Seafarer's Training, Certification and Watchkeeping (STCW) Code**

Part A : Mandatory standards regarding provisions of the annex to the STCW Convention
Chapter VIII : Standards regarding watchkeeping ..... 172
Part B : Recommended guidance regarding provisions of the STCW Convention and its annex
Chapter VIII : Guidance regarding watchkeeping ..... 195



Scanned by CamScanner

# IMO

# RULE OF THE ROAD



Scanned by CamScanner

# PART 'A' - GENERAL

## *RULE 1*

## APPLICATION

(a) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.

The rules were formulated by the International Maritime Organisation (IMO). They have been amended from time to time. They have to be followed by all vessels when they are navigating in the high seas and in waters connected to the seas, i.e. rivers, etc.

These rules have to be complied with when a vessel is in the Atlantic ocean, Arabian sea, Bay of Bengal, Hoogly river, approaching Port of Haldia, etc.

(b) Nothing in these Rules shall interfere with the operation of special rules made by an appropriate authority for roadsteads, harbours, rivers, lakes or inland waterways connected with high seas and navigable by seagoing vessels. Such special rules shall conform as closely as possible to these Rules.

These rules do not prevent a local government or any organisation authorised by the local government, from making special rules for avoiding collisions within the waters under the control of that government. These special rules shall be such that when a vessel which normally sails in international waters, arrives in the waters of the local government, the officers on board the vessel can easily comply with the special rules. It means that the special rules made by the local government shall be in line with these Rule of the Road.

*The Government of India or the Harbour Master of the port of Haldia, under the authority given to him by the Government of India, can make special rules which will apply within the waters controlled by the Government of India. These rules shall be such that they do not differ from the ROR so as to cause confusion.*

(c) Nothing in these Rules shall interfere with the operation of any special rules made by the Government of any State with respect to additional station or signal lights, shapes or whistle signals for ships of war and vessels proceeding under convoy, or with respect to additional station or signal lights or shapes for fishing vessels engaged in fishing as a fleet. These additional station or signal lights, shapes or whistle signals shall, so far as possible, be such that they cannot be mistaken for any light, shape or signal authorized elsewhere under these Rules.

These rules do not prevent a local government from making special rules with respect to additional communication station or signal lights or shapes to be displayed by ship or port or whistle signal to be sounded by a war ship or ships proceeding in a convoy (eg Suez canal). The local government can also make such special rules which can apply to fishing vessels when fishing in a group. These special light signals, sound signals, shapes, shall be such that they are not mistaken for some internationally accepted signal as given in these Rule of the Road.

The Government of Egypt can make special rules for ships proceeding in a convoy in the Suez



Scanned by CamScanner

canal. These rules may be with respect to additional signal stations established along the canal, signal lights and shapes to be displayed by ships and signal stations, or sound signals to be sounded by them. Such special rules may be made for war ships or ships fishing in a fleet, e.g. off the coast of China, Japan, etc. Off the coast of Japan, large ships have to display a flashing blue light which is local a regulation. There is no blue light prescribed by ROR and hence it does not conflict with the international signals.

(d) Traffic separation schemes may be adopted by the Organization for the purpose of these Rules.

The IMO is authorised to adopt traffic separation schemes to control the traffic and keep vessels away from each other by establishing lanes. This will help to avoid collisions between vessels in high traffic density areas.

In areas such as Malacca Straits, Off South coast of Sri Lanka, approaches to port of Mumbai, etc, the IMO has established traffic separation schemes so that vessels on opposite courses are kept in lanes away from one another and crossing vessels are allowed to cross at precautionary areas. This reduces the possibility of collision between ships which are navigating in narrow channels and close to one another.

(e) Whenever the Government concerned shall have determined that a vessel of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to the number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signalling appliances, such vessel shall comply with such other provisions in regard to the number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signalling appliances, as her Government shall have determined to be the closest possible compliance with these Rules in respect of that vessel.

The government of a country can make special rules for ships flying its flag, and due to their special construction cannot comply with these rules fully. The government will ensure that such special rules shall be as close as possible to the rules prescribed by ROR.

An aircraft carrier which has its accommodation on one side to allow for a clear runway for the aircraft to land and take off, the two mast head lights are not in line with the fore and aft line of the vessel but are displaced from the fore and aft line to one side. This is permitted by the rules as long as they show masthead lights side lights and stern lights.

## *RULE 2*

## RESPONSIBILITY

(a) Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

This part of the rule explains the responsibility of the vessel, her owner, master and crew.

This Rule can be divided into the following sub parts for understanding;



Scanned by CamScanner

i) If a vessel does not comply with these rules, the vessel, owner, master or crew shall not be able to escape from their responsibility towards the consequences that such neglect may result in.

ii) It also states that they will have to take such precautions as are required by the ordinary practice of seamen, even if they are not stated here.

iii) The circumstances may be such that they may not have been foreseen and hence there may not be any rules to cover the situation. In such case the vessel, her owner, her master and crew will take such precautions as may be required for the safety of the vessel. If they do not do so they will be held responsible for the consequences caused by this failure.

The term 'exonerate' used in this rule means 'to find not guilty, to forgive, to pardon, to absolve, to vindicate'. Thus 'nothing will exonerate' means the vessel 'cannot be forgiven', 'cannot be pardoned', 'cannot be found not guilty'.

If a vessel does not take avoiding action as required by these rules, she will be held responsible for the accident which could happen due to its negligence in complying with these rules.

When a vessel takes avoiding action as required by these rules, she must take such precautions to ensure that her action is taken well before the situation become critical, and her action should not create a dangerous situation for herself and for another vessel.

A vessel may be involved in a close quarters situation with more than one vessel in a channel or traffic separation scheme and may find that the rules for collision avoidance may not give clear guidance with reference to the unique situation the vessel finds herself in. In such a situation the vessel shall take such necessary action/s as required to avoid a collision. The vessel will not be able to defend itself by arguing that there was no guidance provided in the Rules of the Road.

(b) In construing and complying with these Rules due regard shall be had to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels involved, which may make a departure from these Rules necessary to avoid immediate danger.

This part of the rule has two important terms;

Construing – understanding

Complying – following

The rule states that when a vessel is complying with the requirements of these rules, the vessel must also take into consideration the dangers involved. This means that if a vessel is required to alter course to avoid a collision, this alteration of course done as per rules, shall not cause the vessel to run aground or be involved in another collision. The limitations of the vessel such as her draft, trim, speed, blind sectors, etc shall be taken into account while taking action. This means that action may have to be taken allowing sufficient time to have the desired effect.

Since the purpose of these rules is to avoid collisions between vessels, this part of the rule states that a vessel may deviate from these rules and take such action which will result in safe passing between vessels.



Scanned by CamScanner

A vessel is required by these rules to alter course to starboard to avoid a close quarters situation with a crossing vessel but if there is shallow patch to starboard, she should take such action which will keep her clear of the shallow patch too.

A vessel in ballast condition should allow for the set due to current and drift due to wind effect when she alters course to avoid a collision. The vessel will have to make special allowance for her condition when taking any action as required by these rules.

## *RULE 3*

### GENERAL DEFINITIONS

For the purpose of these Rules, except where the context otherwise requires :

(a) The word "vessel" includes every description of water craft, including non-displacement craft, WIG craft and seaplanes, used or capable of being used as a means of transportation on water.

A vessel means any craft that can float and can be used as a means of transportation over the water. This includes ships, fishing vessels, tugs, barges, life boats, sailing vessels, hovercrafts, catamarans, Wing-In—Ground craft, etc.

(b) The term "power-driven vessel" means any vessel propelled by machinery.

The term power driven vessel means a vessel propelled by machinery. This includes vessels with diesel engines, steam engines, paddle boats or any other such propulsion which uses power to move the vessel.

(c) The term "sailing vessel" means any vessel under sail provided that propelling machinery, if fitted, is not being used.

A sailing vessel means a vessel which is using wind power to move the vessel. Such vessel may have engines fitted but as long as she does not use the engines she will be considered a sailing vessel. A sailing vessel, as soon as she starts her engines, if fitted, will be considered a power driven vessel for the purpose of these rules.

(d) The term "vessel engaged in fishing" means any vessel fishing with nets, lines, trawls or other fishing apparatus which restrict manoeuvrability, but does not include a vessel fishing with trolling lines or other fishing apparatus which do not restrict manoeuvrability.

A vessel engaged in fishing means a vessel which is fishing with fishing nets, fishing lines, trawls or other fishing equipment which restrict her manoeuvrability. A vessels fishing with trolling lines is not restricted in her ability to manoeuvre and hence is not considered a vessel engaged in fishing. For a diagrammatic representation of the various types of fishing gear, the Mariners Handbook, NP 100 to be referred to. The rule implies that a vessel on her way to fishing grounds or back, is not considered as a vessel engaged in fishing.

(e) The word "seaplane" includes any aircraft designed to manoeuvre on the water.

A seaplane is an aircraft which lands or takes off from the water. Such craft after landing in the water, can manoeuvre in the water.



Scanned by CamScanner

(f) The term "vessel not under command" means a vessel which through some exceptional circumstances is unable to manoeuvre as required by these Rules and is therefore unable to keep out of the way of another vessel.

A vessel not under command means a vessel which is unable to manoeuvre as required by these rules to avoid a collision. The reasons by which a vessel may be considered as not under command are, engine failure, steering failure, black out, any other cause which is beyond the control of the ships officers, due to which the vessel may not be able to manoeuvre. A vessel which has stopped her engines awaiting instructions is not considered as "Not Under Command".

(g) The term "vessel restricted in her ability to manoeuvre" means a vessel which from the nature of her work is restricted in her ability to manoeuvre as required by these Rules and is therefore unable to keep out of the way of another vessel.

The term "vessel restricted in their ability to manoeuvre", shall include but not be limited to:

(i) A vessel engaged in laying, servicing or picking up a navigation mark, submarine cable or pipeline;

(ii) A vessel engaged in dredging, surveying or underwater operations;

(iii) A vessel engaged in replenishment or transferring persons, provisions or cargo while underway;

(iv) A vessel engaged in the launching or recovery of aircraft;

(v) A vessel engaged in mine clearance operations;

(vi) A vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course.

As we can understand by the above term, it refers to vessels which due to the nature of the work they may be carrying out, will not be able to manoeuvre as required by these rules and hence will not be able to keep out of the way of another vessel. The rule is clear on the fact that the special consideration is given to the vessels only when they are carrying out the work as described in these rules.

(i) This includes a vessel laying, servicing or picking up a navigation buoy,or other navigation aid, laying submarine cable on the sea bed or laying a submarine pipeline.

(ii) It includes a vessel engaged in dredging, (i.e. removing the silt / mud / sand from the sea bed to increase the depth of the water or maintain the depth so that deep draft vessels can transit with sufficient under keel clearance. It includes survey vessels when they are carrying out survey operations. It includes other vessels when carrying out underwater operations such as with divers working below.

(iii) It includes a vessel when she is transferring stores or bunkers to another vessel when they are both underway and also a vessel transferring persons or cargo while underway.

(iv) It includes an aircraft carrier. When aircraft are taking off or landing the aircraft carrier has to head on a steady course, normally head into the wind, and hence will be unable to manoeuvre and keep out of the way of another vessel.



Scanned by CamScanner

(v) It includes a vessel engaged in detecting and picking up the mines which may have been planted in the waters by enemy craft.

(vi) It also includes a towing vessel when the the towing operation severely restricts the towing vessel and her tow in their ability to alter course and hence keep out the way of other vessels. Every towing vessel is not restricted in her ability to manoeuvre,

(h) The term "vessel constrained by her draught" means a power-driven vessel which, because of her draught in relation to the available depth and width of navigable water, is severely restricted in her ability to deviate from the course she is following.

The term 'Vessel constrained by her draught' means a power driven vessel which may have a deep draft compared to the available sea room and hence has to manoeuvre within the deep water route and also a vessel which even though in waters which may be deep, is restricted by the width of the channel and hence cannot manoeuvre and keep out of the way of other vessels.

(i) The word "underway" means that a vessel is not at anchor, or made fast to the shore, or aground.

The term underway means that the vessel is not alongside a berth, or at anchor or is aground. It means that the vessel is floating freely without any restriction and may be using her engine to propel her ahead or may be drifting with her engines stopped. A vessel which is using her engines is said to be 'underway and making way through the water' and a vessel which is not using her engines and is stopped is said to be 'underway and not making way through the water'.

(j) The words "length" and "breadth" of a vessel mean her length overall and greatest breadth.

The terms 'length' for the purpose of these rules means the maximum length of the vessel i.e. the distance between her forward most extremity and after most extremity. The term 'breadth' means the maximum breadth of the vessel, i.e. the distance between her port and starboard extremities.

(k) Vessels shall be deemed to be in sight of one another only when one can be observed visually from the other.

The term 'vessels in sight of one another' means the two vessels can be observed visually from one another by the human eye. The use of binoculars is only to improve the clarity and magnify the image and hence if a vessel can be seen by binoculars she is considered to be 'in sight'.

(l) The term "restricted visibility" means any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms or any other similar causes.

The term restricted visibility means that a vessel cannot see the other vessel due to the atmospheric conditions such as fog, mist, falling snow, heavy rainstorms, sand storm, or such other causes which restrict visibility. Two vessels may be in sight of one another when they are far apart and later due to heavy rain or a fog bank moving in, the vessels may lose sight of one another. This definition is important as the application of the rules changes when vessels lose sight of one another due to atmospheric conditions (referred to as restricted visibility)

(m) The term "Wing-In-Ground (WIG) craft" means a multi-modal craft which, in its main operational mode, flies in close proximity to the surface by utilizing surface-effect action.

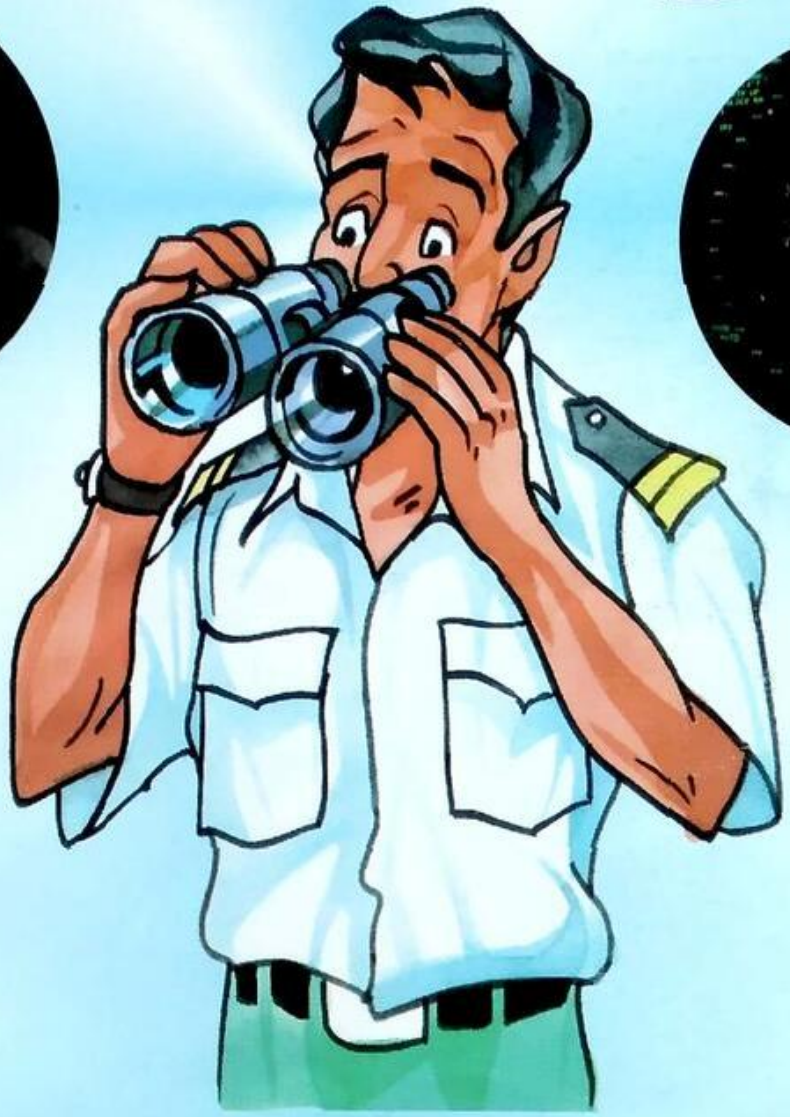


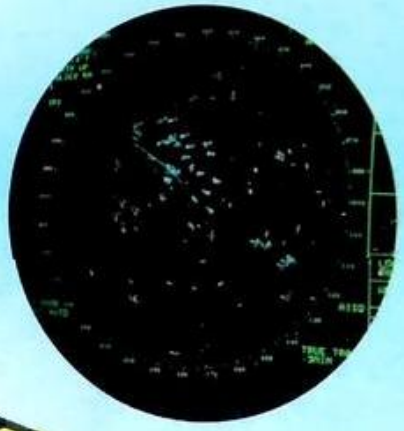
Scanned by CamScanner

The term wing in the ground means an aircraft which flies in close proximity to the surface using the 'surface – effect action'. Refer to picture below

A **wing-in-ground-effect** (**WIG**) **vehicle** is one that attains level flight near the surface of the Earth, made possible by a cushion of high-pressure air created by the aerodynamic interaction between the wings and the surface known as ground effect. Also known as a **ground effect vehicle (GEV)**, **flarecraft**, **sea skimmer**, **ekranoplan**, or **wing-in-surface-effect ship** (**WISE**), a GEV can be seen as a transition between a hovercraft and an aircraft. The International Maritime Organisation (IMO) has classified the WIG as a ship. A WIG differs from an aircraft in that it cannot operate without ground effect, so its operating height is limited relative to its wingspan.

Scanned by CamScanner





# Lookout

This rule is a short rule that places a large responsibility on the navigator. Rather than specific duties, equipment, places, times, and number of persons, Rule 5 requires the master to decide how best to maintain a proper lookout.

The lookout requirement of Rule 5 relies heavily on common sense and good seamanship. If you are able to comply with the Steering and Sailing Rules (Part B of the Rules) and with Rule 34--all of which depend on lookout information--you will no doubt have met the demands of Rule 5. A proper lookout, therefore, provides all the information needed to comply with those Rules. If the information collected by the lookout is insufficient, then the master must intensify his or her lookout efforts (for example, by turning on the radar) allow more time to assess the situation (for example, by slowing a fogbound vessel).

Responsibility for maintaining a proper lookout lies with the vessel's operator, not with a subordinate designated as "lookout." **The vessel's operator--that is, master, watch officer, or person in charge--is the lookout manager.**

Scanned by CamScanner

# PART B - STEERING & SAILING RULES

Rules in this section (Rule 4 to 19) are for collision avoidance. They detail the responsibilities and actions that vessels must take to avoid a collision. They are divided into three sections,

i) Conduct of vessels in any condition of visibility, i.e. whether in sight of one another or not (Rules 4 to 10)

ii) Conduct of vessels in sight of one another, i.e. vessels which can see one another with the eye (Rules 11 to 18)

iii) Conduct of vessels not in sight of one another, i.e. vessels which cannot see one another with the eye (Rule 19)

## SECTION I: CONDUCT OF VESSELS IN ANY CONDITION OF VISIBILITY

### *RULE 4*

APPLICATION

Rules in this Section apply in any condition of visibility.

Rules in this section have to be complied with by all vessels in all conditions of visibility. It means that irrespective of the condition of the visibility, whether clear visibility or restricted visibility, all vessels have to comply with the requirements of rules 4 to 10.

### *RULE 5*

LOOK-OUT

Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

This rule is the basis of collision avoidance. It is considered a cardinal sin not to maintain lookout when the vessel is at sea. The rule states that every vessel, shall at all times, maintain a proper lookout by sight and hearing (i.e. look for lights exhibited by vessels at night and for the vessels during day, hear the fog signals sounded in restricted visibility, use of sound reception system if fitted) and all available means (the other available means include radar, AIS, VHF and other such equipment which will aid the navigator in detecting the presence of the other vessel). The method of keeping lookout will depend on the prevailing circumstances and conditions (whether it is clear or restricted visibility, density of traffic, available sea room, etc). The aim of keeping lookout is the early detection of the other vessel and make a full analysis of the situation and determine if risk of collision exists.

The Master / OOW has to use his knowledge of good seamanship practice and navigational skills to decide the composition of the lookout.

In open sea under clear weather conditions and during the day time, the duty officer can act as the sole lookout.

At night time (hours of darkness) a lookout is posted so as to avoid one man bridge operation.



Scanned by CamScanner

In restricted visibility conditions, dense traffic areas, Master will decide to post additional lookouts.

The rule requires us to avoid being overconfident and neglect our primary duty of keeping lookout.

Many accidents have taken place in the past where ships have collided head on in crystal clear visibility conditions when they were in sight of one another for nearly one hour before the collision. The reason for this is simple for you to understand, 'no effective lookout was maintained'.

## *RULE 6*

## SAFE SPEED

Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.

This rule is important as it gives guidance on the speed that a vessel can proceed at. We know that on the road, a vehicle moving fast has a higher chance of being involved in a collision than a slower moving vehicle because slower the vehicle moves, the time to collision point is more, giving the driver more time to assess the situation and take avoiding action. The same principle applies to us at sea. Every vessel is required to move at a safe speed so that she can take proper and effective action to avoid a collision.

The rule requires that a vessel should be able to be stopped within a distance appropriate to the prevailing circumstances and conditions.

This means that in clear visibility a vessel can move at full speed provided the officers are aware of her 'stopping distance'. Information 'about stopping' is available on the Manoeuvring diagram posted on the bridge. In the event of sudden drop in visibility or if reduced visibility is anticipated estimated speed should be such that the navigator, having prior knowledge of Maneuvring diagram be able to reduce speed or take all way off to avoid collision. The navigator at all times should be aware of anticipated dangers taking into consideration the location vessel is navigating in as well as factors as discussed in Rule 6(a) below.

The use of radar does not allow the vessel to proceed at an unsafe speed because higher the speed lesser is the response time available to the vessels officers to take avoiding action in case a collision situation starts to develop.

In determining a safe speed the following factors shall be among those taken into account:

(a) By all vessels :

- (i) the state of visibility;
- (ii) the traffic density including concentrations of fishing vessels or any other vessels;
- (iii) the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions;
- (iv) at night the presence of background light such as from shore lights or from backscatter of her own lights;
- (v) the state of wind, sea and current, and the proximity of navigational hazards;
- (vi) the draught in relation to the available depth of water.



Scanned by CamScanner

The rule lists criteria that should be considered when deciding safe speed;

a) By all vessels (i.e. vessels with and without operational radar, though today we find it difficult to imagine a vessel without radar but it could happen that the radars may not be operational due to defects or other problems.)

i) State of visibility. The speed should be decided by the prevailing visibility conditions. A vessel which is moving at full speed in clear visibility should reduce speed as she approaches a fog bank or area with heavy rain or when she encounters restricted visibility conditions.

ii) The traffic density. The more the number of ships, including fishing vessels, in the vicinity, the higher the chances of other vessels being involved with own vessel in close quarters situation. This means that a vessel which encounters a large number of vessels in its vicinity, even if the visibility is good, shall have to reduce speed as lower speed will give her more time to assess the situation in collision situations.

iii) The manoeuvrability of the vessel with special reference to her stopping distance. A vessel which is less manoeuvrable compared to another vessel will have to reduce her speed in certains conditions. A very good example of the above can be found in Malacca Straits where very large crude tankers may proceed at reduced speed because their manoeuvrability is poor compared to a container ship which being manoeuvrable can proceed at higher speed. Also the stopping distance for larger vessels is more than that of smaller vessels and hence the larger vessels will be proceeding at slower speed.

iv) At night the presence of background lights such as from shore lights or the backscatter of her own lights. If the shore lights are bright, then it becomes difficult to identify the lights of ships which may be lost in the background lights. The vessel will have to reduce speed so that she gets more time to assess the situation if another vessel starts approaching her. This difficulty could arise even when there are no shore lights but own ships lights are so bright that they interfere with the lookout duties. Hence after sunset, on the ship we draw all the curtains so that the light from inside the accommodation does not escape out and reflect back to the bridge. This is reason we keep all the deck lights off at sea and also the bridge lights are dimmed. The darker the surroundings, easier is it to spot another light which is outside the vessel.

v) The state of the wind, sea, currents and the proximity of navigational hazards. If the weather is severe, the other vessels will not be seen as early as they would be in clear visibility. This will result in less time to evaluate the situation in case of close quarters situation developing. Less speed will result in more time to assess the situation. Strong currents may result in the ships speed over the ground increasing and thus resulting in less reaction time. If there are a number of navigational hazards in the close vicinity of the vessel, less speed will give more time to assess every developing situation.

vi) The draught in relation to the available depth of water. A deep draught vessel will have limited sea room to manoeuvre due to her draft, will find it advantageous to proceed at reduced speed so that she can satisfy her collision avoidance obligations under these rules.



Scanned by CamScanner

b) Additionally, by vessels with operational radar:

(i) the characteristics, efficiency and limitations of the radar equipment;

(ii) any constraints imposed by the radar range scale in use;

(iii) the effect on radar detection of the sea state, weather and other sources of interference;

(iv) the possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range;

(v) the number, location and movement of vessels detected by radar;

(vi) the more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

b) These additional factors have to be taken into consideration by ships which have a radar that is in use:

(i) Electronic equipment used for navigation is considered as an aid to navigation since every electronic equipment could malfunction or give reduced functionality. Hence dependence on electronic equipment should be taken into consideration with due regard to its limitation and capabilities.

(ii) If the vessel is using low range for target detection or for position plotting, the movement of vessels outside the range in use would not be available to the vessel and this would require the user to reduce speed so that as the vessels come within the detection range of the scale in use, the avoiding action can be planned with sufficient time in hand to assess the situation and decide the action.

(iii) When the weather gets rough, the sea waves cause clutter due to which targets close to the vessel will not appear on the radar, this will also happen when the vessel enters a rain cloud which will cause rain clutter and targets in the rain clutter will not show up clearly. Thus if the weather condition cause interference on the radar, it may be advisable to reduce speed,

(iv) Targets which are not radar conspicuous i.e. the radar waves do not return to own ships scanner thus causing them not to be detected by the radar, may be detected when they are very close or may not be detected at all. This has to be kept in mind when deciding the safe speed. If one of the above mentioned targets appears on the radar when close to own vessel, then if own vessel is proceeding at slow speed she will have time to assess the situation and take avoiding action.

(v) If there are a number of vessels detected by the radar then it would be difficult to plot many vessels at one time. If the vessels has ARPA the plotting becomes easier but if there is a swap of vectors on the radar then the ARPA will display incorrect information during the target swap. This could lead to a close quarters situation and can be avoided by reduced speed.

(vi) The radar will assist in determining the visibility accurately when some targets can be seen by the eye and the range checked with the Radar display. Then if it is possible vessel can increase or if required decrease her speed to comply with this rule.



Scanned by CamScanner

(22) ATA → Automatic Tracking AID



## RULE 7

### RISK OF COLLISION

(a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.

This rule explains the procedure to follow when determining the risk of collision. It warns regarding the dangers involved in the process of determing if risk of collision exists.

a) Every vessel shall determine if risk of collision exists by any and every means which is available at the time to determine if risk of collision exists. If it cannot be determined with certainty whether there is risk of collision or not, such risk shall be deemed to exist and actions taken accordingly. The various means at the disposal of the vessel are;

i) Radar plotting

ii) Taking the bearing of the target and monitoring if there is significant change in the bearing.

iii) Use of ARPA for automatic plotting,

(b) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects. ARPA

The vessel shall use low radar range to detect smaller targets closer to the vessel and switch to higher range to detect a target when it is at a distance and get early warning about the risk of collision, if any. A vessel should keep changing the radar range scale from high to low to make optimum use of the radar equipment. The vessel shall use radar plotting, manual or automatic, to determine if risk of collision exists.

(c) Assumptions shall not be made on the basis of scanty information, especially scanty radar information. not sufficient (mis lead by radar)

When determining risk of collision, the vessel shall take the decision based on sufficient information. An incorrect decision will lead to an accident or a close quarter situation. The rule states that the decision shall not be based on scanty information, i.e. little information such as two radar bearings and distances, or just one radar bearing and distance, or just by taking visual bearing of the vessel. The decision on whether risk of collision exists shall be based on sufficient information.

(d) In determining if risk of collision exists the following considerations shall be among those taken into account:

(i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change; radar bearing also because it is connected with gyro compass.

(ii) such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.



Scanned by CamScanner

When determining if risk of collision exists, the following factors shall be those taken into account, If there is no appreciable change in the bearing of a vessel which is approaching i.e. its range is reducing and such risk may exist even when there is appreciable bearing change but the target is close or is large or approaching a tow. In this case the change in bearing will indicate that the point on the target whose bearing we are taking, will go clear but the vessel may collide with some other part of the target. This will happen also in case of a towing vessel and tow wherein the bearing of the towing vessel may show that it is changing but the vessel may make contact with the tow which may not clear own vessel.

## *RULE 8*

## ACTION TO AVOID COLLISION

(a) Any action to avoid collision shall be taken in accordance with the Rules of this Part and shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

The rule states that the action to avoid collision shall be positive, which means that it shall be as per the advise given in these rules. It also states that the actions shall be taken as early as possible so that there will be sufficient time to assess if the action is effective and if not it can be modified. An early action also assists in avoiding last minute panic situations where in an incorrect action could be possible. An action taken shall be with observance of good seamanship which means the action shall not result in a close quarters situation with another vessel nor impede the passage of another vessel which may result in her getting involved in an accident.

(b) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and or speed should be avoided.

This part of the rule states that the action taken to avoid a collision shall be large enough for the other vessel to notice that action has been taken. A succession of small alterations of course and / or speed will not be apparent to another vessel observing visually or by radar and this may prompt her to take an incorrect action in the confusion created by the feeling that "the other vessel is not taking action". An example of this is when we have a vessel crossing from our starboard to port **on a collision course,** it is important to alter course substantialy and as early as possible else the other vessel may assume that no action is being taken and alter her course to port resulting in a collision.

(c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close quarters situation.

Under normal circumstances, when there is sufficient safe water, alteration of course may be the best action to avoid collision as it will quickly result in a safe passing between the two vessels. It is important to remember that any action taken to avoid a collision should be made as early as possible and before taking the action it should be ensured that it does not lead to another close quarters situation. As we can well understand, even though reduction of speed will give us more time to assess the situation it is not recommended unless there is an emergency.



Scanned by CamScanner

Sudden reduction of speed will result in damage to the engine and should be used as a last resort to avoid a collision. Alteration of course is the best recommended action to avoid a collision.

(d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.

When we take action to avoid a collision, the aim is to pass well clear of the other vessel and the action should result in a safe passing. Even after the avoiding action has been taken and it appears that the vessels will pass safely, it is important that the situation is monitored as the other vessel could alter her course / speed and a new close quarters situation may develop. The result of the avoiding action shall be monitored until the other vessel has gone past safely.

(e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

We know that if a vessel is proceeding at a speed which is less than her normal speed she will get more time to assess the situation if a risk of collision exists. Thus less the speed, more will be the time available to assess the situation. If the situation is not clear then the best option is to stop the vessels engine or stop the ahead motion by going astern. If both vessels take this action by either stopping the vessel or taking all way off they can then assess the situation and move slowly away from one another. In practice however in taking action to avoid close quarter situation the first option is to alter course while preparing the vessels engines to reduce speed. In the case of vessels with variable pitch propellors, such as some modern engines of Tankers and Passenger vessels, anchor handling vessels or platform support vessels, the vessels can quickly change the pitch of the engines without having to stop or reduce the revolution of the engine to effectively reduce the speed. In which case there should be no hesitation to reduce speed as first option.

(f) (i) A vessel which, by any of these rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, take early action to allow sufficient sea room for the safe passage of the other vessel.

A vessel, which is the give-way vessel, should take early and positive action to avoid collision so that she passes well clear of the other vessel.

(ii) A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by the Rules of this part.

The give-way vessel shall take such action as will result in safe passing. This part of the rule requires the give way vessel to take such action that the two vessels pass clear of one another.

(iii) A vessel the passage of which is not to be impeded remains fully obliged to comply with the rules of this part when the two vessels are approaching one another so as to involve risk of collision.

The vessel which is the stand-on vessel ie the vessel whose passage is not to be impeded, will still be responsible to avoid a collision if the situation is developing whereby the action of the give



Scanned by CamScanner

way vessel alone will not be sufficient to avoid a collision. The implication of this is very clear. Just because a sailing vessel which is a give way vessel is supposed to keep clear of a power driven vessel in a narrow channel, the power driven vessel shall not allow the sailing vessel to approach her dangerously close and she should observe the action of the sailing vessel and take action to prevent a collision if the action of sailing vessel is not enough.

We have included on a CD an example of how a sailing vessel under engine power crashes onto a large ferry.

## *RULE 9*

## NARROW CHANNELS

(a) A vessel proceeding along the course of a narrow channel or fairway shall keep as near to the outer limit of the channel or fairway which lies on her starboard side as is safe and practicable.

The rule requires all vessels which are navigating in a narrow channel or fairway to keep to the starboard side of the channel. This will avoid any head on situations as vessels will pass on the port side of the other vessels which are proceeding on a reciprocal course. By keeping to the starboard side of a narrow channel or a fairway vessels will avoid collision situations from developing.

(b) A vessel of less than 20 metres in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway.

In a narrow channel or fairway where bigger vessels navigate, the rule requires smaller vessels which can safely navigate on the edges of the channel or outside the fairway, to avoid obstructing the passage of such vessels. It states that in a narrow channel or fairway a vessel of less than 20 metres in length or a sailing vessel shall avoid obstructing the passage of such vessel. Also, narrow channels or fairways being close to ports, there will be numerous small vessels navigating and hence they should keep the channel or fairway clear for the bigger vessels. Outside a narrow channel or fairway a power driven vessel will have to keep clear of a sailing vessel but in a narrow channel or fairway the sailing vessel should keep clear of the power driven bigger vessel.

(c) A vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrow channel or fairway.

In Rule 18 it is explained that all vessels except a vessel 'not under command' shall keep clear of a fishing vessel but in a narrow channel or fairway the rule states that a fishing vessel shall keep clear of the other vessels and avoid obstructing their passage. This is because if fishing vessels start fishing in approaches to ports or in the channels, they will obstruct the safe passage of the vessels using the channel to enter or leave the port and this may cause close quarters situation to develop and the possibility of collisions will increase.

(d) A vessel shall not cross a narrow channel or fairway if such crossing impedes the passage of a vessel which can safely navigate only within such channel or fairway. The latter vessel may use the sound signal prescribed in Rule 34(d) if in doubt as to the intention of the crossing vessel.



Scanned by CamScanner

A vessel navigating in a narrow channel or fairway will not be able to take avoiding action in case a close quarters situation develops. The rule requires that no vessel shall cross a narrow channel or fairway if it obstructs the passage of a vessel using the narrow channel or fairway. Thus a vessel which requires to cross the narrow channel or fairway should wait for the other vessel to clear before crossing. If a vessel using a narrow channel or fairway finds a vessel navigating so as to involve a risk of collision, she shall sound five short and rapid blasts on her whistle to indicate to the other vessel that she does not understand the intention of the other vessel.

(e) (i) In a narrow channel or fairway when overtaking can take place only if the vessel to be overtaken has to take action to permit safe passing, the vessel intending to overtake shall indicate her intention by sounding the appropriate signal prescribed in Rule 34(c)(i).

The vessel to be overtaken shall, if in agreement, sound the appropriate signal prescribed in Rule 34(c)(ii) and take steps to permit safe passing. If in doubt she may sound the signals prescribed in Rule 34(d).

In a narrow channel or fairway when a vessel intends to overtake another vessel and the vessel to be overtaken has to take action to permit safe passing, the over taking vessel shall sound on her whistle 'Two prolonged blasts followed by one short blast' to indicate 'I intend to overtake you on your starboard side' and 'Two prolonged blasts followed by two short blasts to indicate 'I intend to overtake you on your port side'. The vessel to be overtaken will then have to adjust her course to port or starboard to create searoom within the narrow channel or fairway to permit safe passing and she shall indicate her agreement to the safe passing by sounding 'One prolonged blast, one short blast, one prolonged blast, one short blast' (Morse 'C') on her whistle. If she has doubts whether a safe passing can be done under the prevailing circumstances she will sound 'Five short and rapid blasts' on her whistle to indicate to the other vessel that she has some reservations about the intended manoeuvre.

(ii) This Rule does not relieve the overtaking vessel of her obligation under Rule 13.

Rule 13 states that an overtaking vessel shall keep clear off a vessel being overtaken. Hence even if the vessel being overtaken has to take action to permit safe passing the rule clearly states that the responsibility of safe passing still rests with the overtaking vessel. The overtaking vessel will have to be cautious when overtaking another vessel, whether such overtaking is taking place at sea or in a narrow channel or fairway.

(f) A vessel nearing a bend or an area of a narrow channel or fairway where other vessels may be obscured by an intervening obstruction shall navigate with particular alertness and caution and shall sound the appropriate signal prescribed in Rule 34(e).

A vessel approaching a bend or a narrow channel area or fairway where an approaching vessel may not be seen due to an obstruction, she shall sound one prolonged blast on her whistle to indicate her presence to the other vessel so that the other vessel is warned in advance. Radars and AIS could be useful in such situations as they may be able to indicate the presence of another vessel which is approaching a bend even before she is visually sighted.

(g) Any vessel shall, if the circumstances of the case admit, avoid anchoring in a narrow channel.

The rule requires that vessels shall not anchor in a narrow channel or fairway as this will create an obstruction for the vessels using such narrow channel or fairway. A vessel may under extreme



Scanned by CamScanner

circumstances such as engine failure, power failure, steering failure or such other situations beyond the control of the vessel and which have the potential to have serious consequences, anchor in a narrow channel or fairway

## *RULE 10*

## TRAFFIC SEPARATION SCHEMES

(a) This rule applies to traffic separation schemes adopted by the Organization and does not relieve any vessel of her obligation under any other rule.

The IMO has adopted traffic separation schemes in various parts of the world to avoid accidents between ships. The aim of the traffic separation schemes is to keep vessels on opposing courses away from each other. This rule applies to all such traffic separation schemes adopted by the IMO. A vessel using a traffic separation schemes does not get special treatment and has to follow all the other rules as per these collision avoidance regulations.

(b) A vessel using a traffic separation scheme shall :

(i) proceed in the appropriate traffic lane in the general direction of traffic flow for that lane;

When a vessel is in a traffic separation scheme she shall navigate in the direction marked for the lane. This will ensure that ships on reciprocal courses are not in the same lane and hence the chances of close quarters situations developing will be eliminated.

(ii) so far as practicable keep clear of a traffic separation line or separation zone;

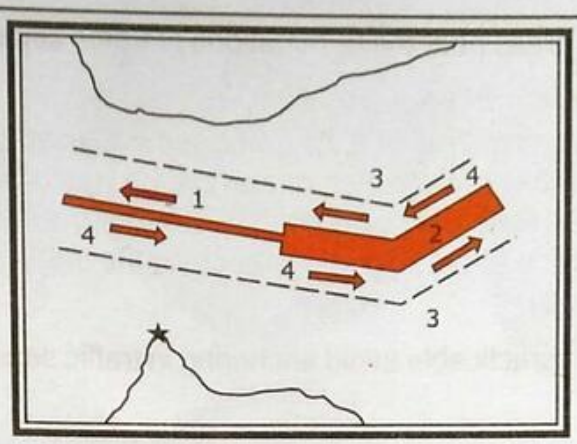
A vessel using a traffic separation scheme shall keep clear of the edges of the lane so that she does not inadvertently drift into the other lane or separation zone and also does not create a near head on situation with a vessel in the other lane. A separation zone may or may not have obstructions and it is prudent to keep clear of the separation zone. Vessels may use separation zones to anchor in an emergency or vessels may be engaged in fishing within a separation zone.

(iii) normally join or leave a traffic lane at the termination of the lane, but when joining or leaving from either side shall do so at as small an angle to the general direction of traffic flow as practicable.

A vessel joining or leaving a traffic lane shall do so in such a manner as to avoid creating confusion. The joining or leaving should be done at the termination of the traffic separation schemes but when required to do so before the termination point, she shall leave the lane gradually at a small angle to the general direction of the traffic flow.



Scanned by CamScanner




Traffic separation by separation zone and line

In this method streams of traffic proceeding in opposite or nearly opposite direction are separated by separation zones (2) or lines (1); the use of zones is to be preferred, but in narrow passages and restricted waters it may be necessary to use a separation line rather than a zone so as to allow more navigable space in the traffic lanes. A length of separation line may also be substituted for a zone in positions where this may encourage and facilitate correct procedures by crossing traffic. The outside limit (3) of such traffic separation schemes are the outer boundaries of the traffic lanes. The arrows (4) indicate the established direction of traffic flow.

(c) A vessel shall, so far as practicable, avoid crossing traffic lanes but if obliged to do so shall cross on a heading as nearly as practicable at right angles to the general direction of traffic flow.

A vessel shall avoid crossing traffic lanes. She should cross in an area after the traffic separation scheme has terminated. If required to cross a traffic lane this will be done at right angles so that the crossing is completed in the shortest possible time. When crossing a traffic lane a vessel will ensure that she is not impeding the safe passage of another vessel as required by good practice of seamanship.

(d) (i) A vessel shall not use an inshore traffic zone when she can safely use the appropriate traffic lane within the adjacent traffic separation scheme. However, vessels of less than 20 metres in length, sailing vessels and vessels engaged in fishing may use the inshore traffic zone.

Inshore traffic zone is the sea area between the shore and the outer edge of the separation zone or a traffic lane. This area normally has less water depth and is frequented by smaller vessels. A vessel which is transitting a traffic separation scheme shall avoid an Inshore traffic zone. Smaller vessels and coastal traffic is permitted to use the inshore traffic zone.

(ii) Notwithstanding subparagraph (d)(i), a vessel may use an inshore traffic zone when en route to or from a port, offshore installation or structure, pilot station or any other place situated within the inshore traffic zone, or to avoid immediate danger.

If the destination of a vessel is within an inshore traffic zone, then a vessel may transit through the inshore traffic zone. A vessel may use an inshore traffic zone in an emergency such as failure of the engines, steering, power etc, to anchor or carryout repairs.

(e) A vessel, other than a crossing vessel, or a vessel joining or leaving a lane shall not normally enter a separation zone or cross a separation line except :

(i) in cases of emergency to avoid immediate danger;

(ii) to engage in fishing within a separation zone.

Unless authorised by these rules a vessel shall not cross a separation zone or a separation line unless there is an emergency (eg engine, steering, power failure, etc). A vessel is allowed to be engaged in fishing in the separation zone.



Scanned by CamScanner

(f) A vessel navigating in areas near the terminations of traffic separation schemes shall do so with particular caution.

A vessel navigating near a point where the traffic separation scheme ends or begins, will have to keep a sharp lookout for vessels joining or leaving the traffic separation scheme. It is possible that some vessels may make a sharp alteration on exiting a traffic separation scheme. It could lead to a collision situation and a vessel approaching the traffic separation scheme shall keep a lookout for such vessels.

(g) A vessel shall so far as practicable avoid anchoring in traffic separation scheme or in areas near its terminations.

This part of the rule prohibits the dropping of anchor in a separation scheme or near its end point as this will interfere with the safe passage of other vessels and may lead to collisions. A vessel dropping anchor in an emergency can do so inside the separation zone and a vessel which requires to drop anchor to wait for any reason such as instructions from owners, tide, pilot etc. should do so at a safe distance from the traffic separation scheme.

(h) A vessel not using a traffic separation scheme shall avoid it by as wide a margin as is practicable.

A vessel which for some reason does not want to follow a traffic separation scheme, shall avoid the traffic separation scheme by a wide distance so that it does not confuse other vessels using the traffic separation scheme. If a vessel not using a traffic separation scheme approaches close to the lanes then it could cause vessels using the traffic separation scheme to be confused as she may be heading in the opposite direction to the other vessels.

(i) A vessel engaged in fishing shall not impede the passage of any vessel following a traffic lane.

Even though a power driven vessel has to keep clear under normal circumstances, in a traffic separation scheme a fishing vessel shall keep clear of another vessel in the traffic separation scheme. The fishing vessel can carry out its activity in a separation zone but should not obstruct the passage of a vessel using the traffic separation scheme.

(j) A vessel of less than 20 metres in length or a sailing vessel shall not impede the safe passage of a power-driven vessel following a traffic lane.

Even though a power driven vessel has to keep clear of a sailing vessel under normal circumstances, in a traffic separation scheme the sailing vessel shall keep clear of the power driven vessel.

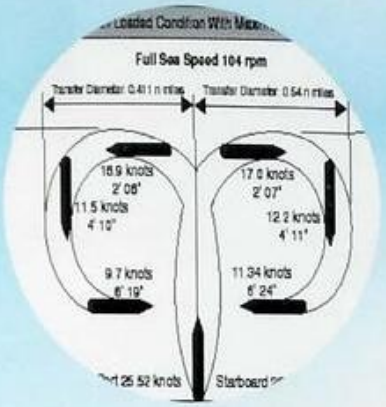
(k) A vessel restricted in her ability to manoeuvre when engaged in an operation for the maintenance of safety of navigation in a traffic separation scheme is exempted from complying with this Rule to the extent necessary to carry out the operation.

(l) A vessel restricted in her ability to manoeuvre when engaged in an operation for the laying, servicing or picking up of a submarine cable, within a traffic separation scheme, is exempted from complying with this Rule to the extent necessary to carry out the operation.

A vessel restricted in her ability manoeuvre is exempted from complying with this rule when she is carrying out any work connected with the safety of navigation, such as servicing a buoy, laying new buoys, dredging work etc. This exemption is applicable only to the extent required to carry out the work at hand and is not a blanket permission to ignore this rule.



Scanned by CamScanner



# Safe Speed

This rule places a great deal of responsibility on the good judgment of the mariner.

Even if excessive speed is not the most glaring cause of maritime accidents, there have been very few collisions between stopped vessels; vessels involved in a collision are apt to have been moving too fast.

It is very important that you give due consideration to any factor suggesting a change in speed. Because a closing situation may develop rapidly, the person in charge should feel free to call for a reduction in speed without having first to notify another person (for example, the master or engineer).

The first objective of maintaining a safe speed is to permit the vessel "to take proper and effective action to avoid collision." To be able to maneuver as prescribed by the Rules, the vessel must be moving slowly enough to control its forward motion. In some cases, it must also be moving fast enough for the rudder to effect a turn promptly

Scanned by CamScanner

# SECTIONS II

## CONDUCT OF VESSELS IN SIGHT OF ONE ANOTHER

As the title indicates, these rules have to be complied with only when two vessels are meeting so as to involve risk of collision and they can visually see one another. These rules do not apply when the two vessels which are meeting on a collision course, are not in sight of one another. Many a times officers make this error of applying these rules in restricted visibility and it results in violation of the rules.

### *RULE 11*

### APPLICATION

**Rules in this Section apply to vessels in sight of one another.**

Rules in this section i.e. from rule 11 to 18, have to be complied with when the vessels involved in a collision situation are in sight of one another. We have understood the meaning of 'in sight of one another' in rule 3. In restricted visibility, rule 19 applies until the vessels are not visually seen by one another but as soon as they can be seen then rules in this section will apply.

Please pay attention to the application of the rules because some rules apply to all vessels and other apply to 'power driven vessels' only. Do not get confused about the application of the rules to the type of vessels.

### *RULE 12*

### SAILING VESSELS

(a) When two sailing vessels are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows:

(i) When each has the wind on a different side, the vessel which has the wind on the port side shall keep out of the way of the other;

We have seen that power driven vessels have to keep clear of a sailing vessel at all times except in a Narrow channel (Rule 9) and in a Traffic separation scheme (Rule 10).

But when two sailing vessels are involved in a collision situation then they will take action to avoid collision as per this rule.

When they are on reciprocal courses so that the wind is on different side for each vessel then the vessel which has the wind on her port side shall keep out of the way of the other vessel.

(ii) When both have the wind on the same side, the vessel which is to windward shall keep out of the way of the vessel which is to leeward;

The windward side is the side from which the wind is blowing and leeward side is the side which is calm as opposite to the windward side.

If the two vessels are on converging courses then they may have the wind on the same side. In this case the vessel which is to the windward (i.e. if the wind is blowing from the north then the



Scanned by CamScanner

vessel which has the other to her south) shall keep out of the way of the vessel which is to the leeward.

(iii) if a vessel with the wind on the port side sees a vessel to windward and cannot determine with certainty whether the other vessel has the wind on the port or on the starboard side, she shall keep out of the way of the other.

This rule combines the first two parts of this rule. The first two parts required a vessel which has wind on her port side to keep out of the way of the other vessel and also a vessel which is to windward is required to keep out of the way of the other vessel. Combining these two rules, this rule states that a vessel which has the wind on her own port side and sees a vessel to the windward and she is confused if the other vessel is required to keep out of her way, she shall assume that it is her responsibility and take avoiding action.

(b) For the purpose of this Rule the windward side shall be deemed to be the side opposite to that on which the mainsail is carried or, in the case of a square-rigged vessel, the side opposite to that on which the largest fore-and-aft sail is carried.

On a sailing vessel, the sails move over to the side opposite to the side from which the wind is blowing, hence the windward side is the side opposite to the side on which the sail is carried.

## *RULE 13*

## OVERTAKING

(a) Notwithstanding anything contained in the Rules of Part B, Sections I and II, any vessel overtaking any other shall keep out of the way of the vessel being overtaken.

This rule states that any vessel overtaking another vessel shall have to keep out of the way of the vessel being overtaken. We have seen that in some cases such as in a narrow channel, the overtaken vessel may be required to take action to allow the overtaking vessel to pass safely. Irrespective of such requirements, the overtaking vessel is always required to keep out of the way of the vessel being overtaken. The rules in Part B are the Steering and Sailing rules and they apply in all conditions of visibility (Section I - Rules 4 to 10), and when in sight of one another (Section II - Rules 11 to 18) Rule 13 applies irrespective of the requirements of section I and II of these rules.

(b) A vessel shall be deemed to be overtaking when coming up with another vessel from a direction more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the sternlight of that vessel but neither of her sidelights.

This rule explains how a vessel shall determine if she is the overtaking vessel or a crossing vessel. If a vessel is approaching another vessel from a direction such that at night she can see only the stern light of the other vessel and during the day she can see the corresponding aspect of the other vessel, then it is an overtaking situation. If at night she can see the side lights of the other vessel and the corresponding aspect during the day, then it is a crossing situation. If it is a crossing situation then rule 15 applies.



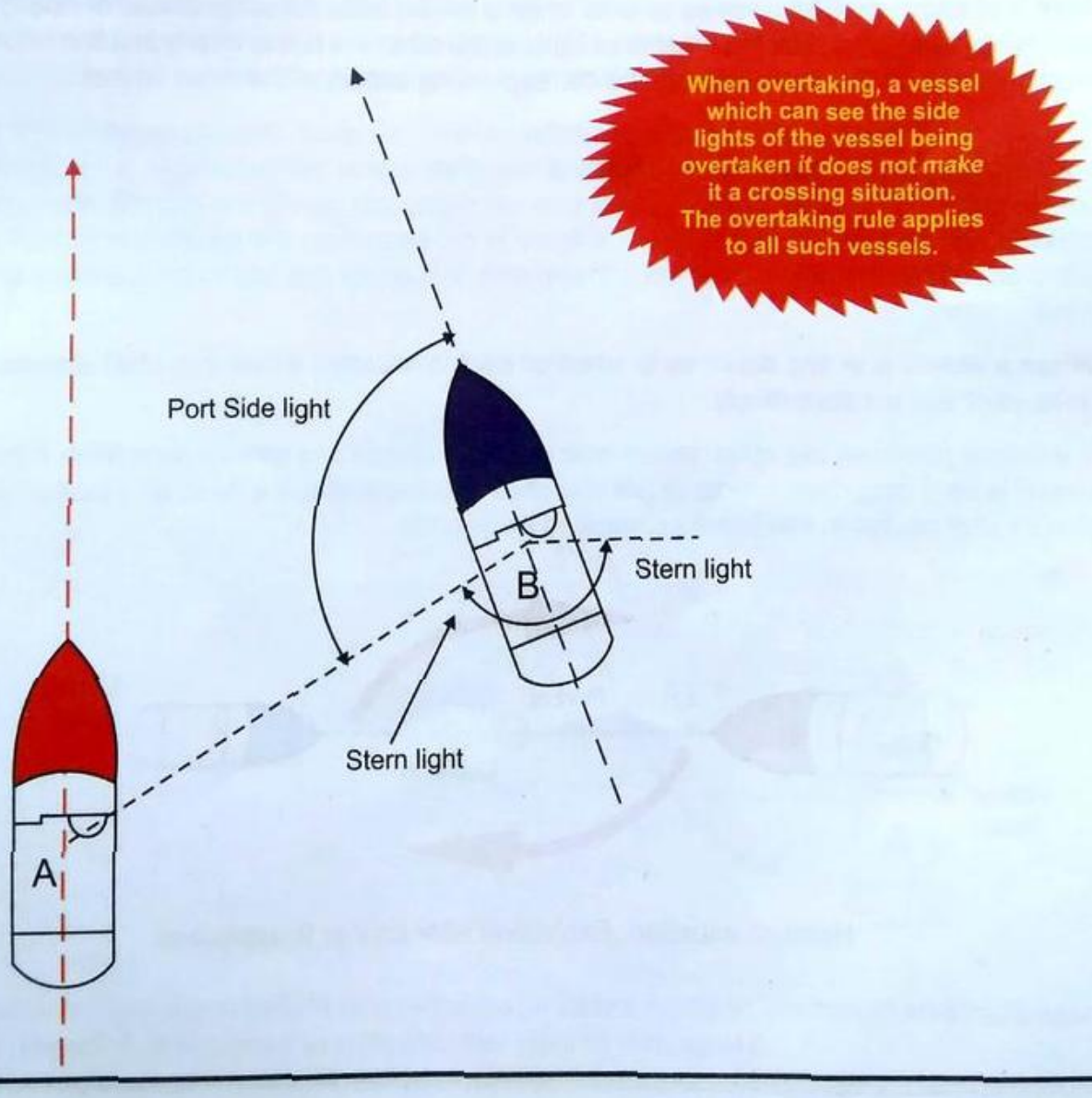
Scanned by CamScanner

(c) When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.

If there is a doubt whether the situation is a crossing situation or not, then the vessel will assume that it is a crossing situation and take action to avoid collision. This requirement has been made to avoid a situation wherein a vessel does not, erroneously, consider itself to be a crossing vessel and expect the other vessel to take avoiding action, which might then result in an accident.

(d) Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

As this rule has explained, in an overtaking situation the overtaking vessel will see only the stern light of the overtaken vessel. Subsequently as the overtaking vessel comes abeam of the overtaken vessel, she will be able to see the side lights of the other vessel. This will not change the overtaking situation into a crossing situation and the overtaking vessel will remain responsible for the safe passing until she has safely passed the overtaken vessel. (See diagram below)


When overtaking, a vessel which can see the side lights of the vessel being overtaken it does not make it a crossing situation. The overtaking rule applies to all such vessels.
Port Side light
Stern light
Stern light
A
B



Scanned by CamScanner

## RULE 14

### HEAD-ON SITUATION

(a) When two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the *port side of the other.*

The rule applies in situations where two power driven vessels proceeding on reciprocal (i.e. courses which have a difference of nearly 180 deg) courses meet such that they are right ahead of each other. This will involve a risk of collision and the rule requires each vessel to alter course to starboard so as to pass on the port side of the other.

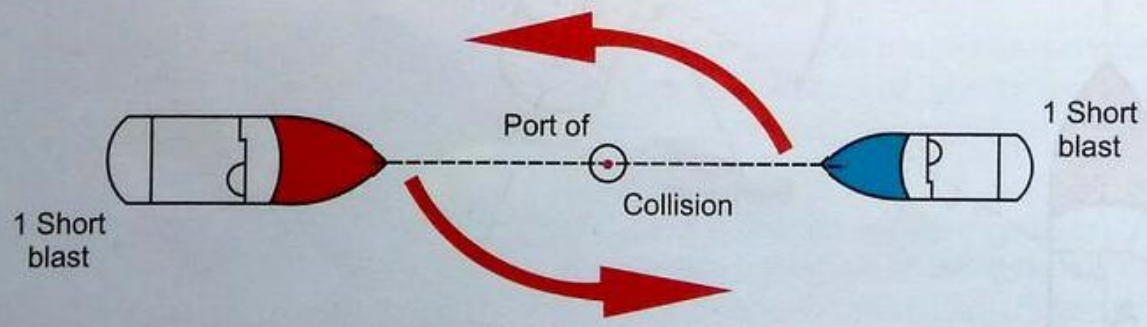
The OOW should remember that it is his duty to ensure that it is safe to alter course to the starboard side (i.e. there is sufficient sea room and there are no dangers or other vessels to starboard). Remember the instructions given in rule 2b which states that 'In construing and complying with these rules due regard shall be had to all dangers of navigation.

(b) Such a situation shall be deemed to exist when a vessel sees the other ahead or nearly ahead *and by night she could see the masthead lights of the other in a line or nearly in a line* and/or both sidelights and by day she observes the corresponding aspect of the other vessel.

To determine if this rule applies to a particular collision situation, this rule explains that a head situation exists when the masthead lights of the other vessel can be seen in a line or nearly in line and both of her side lights are also seen at night, and during the day the corresponding aspects can be seen. If one of her side lights is not seen then the situation is not a head on situation. But as the next part of the rule explains, if in doubt this has to be assumed to be the case.

(c) When a vessel is in any doubt as to whether such a situation exists she shall assume that it does exist and act accordingly.

If a vessel observes the other vessel which is right ahead and cannot determine if the other vessel is on a reciprocal course or not she shall assume that it is a head on situation and she should alter course to starboard as required by this rule.




Head on situation. Each shall alter course to starboard.



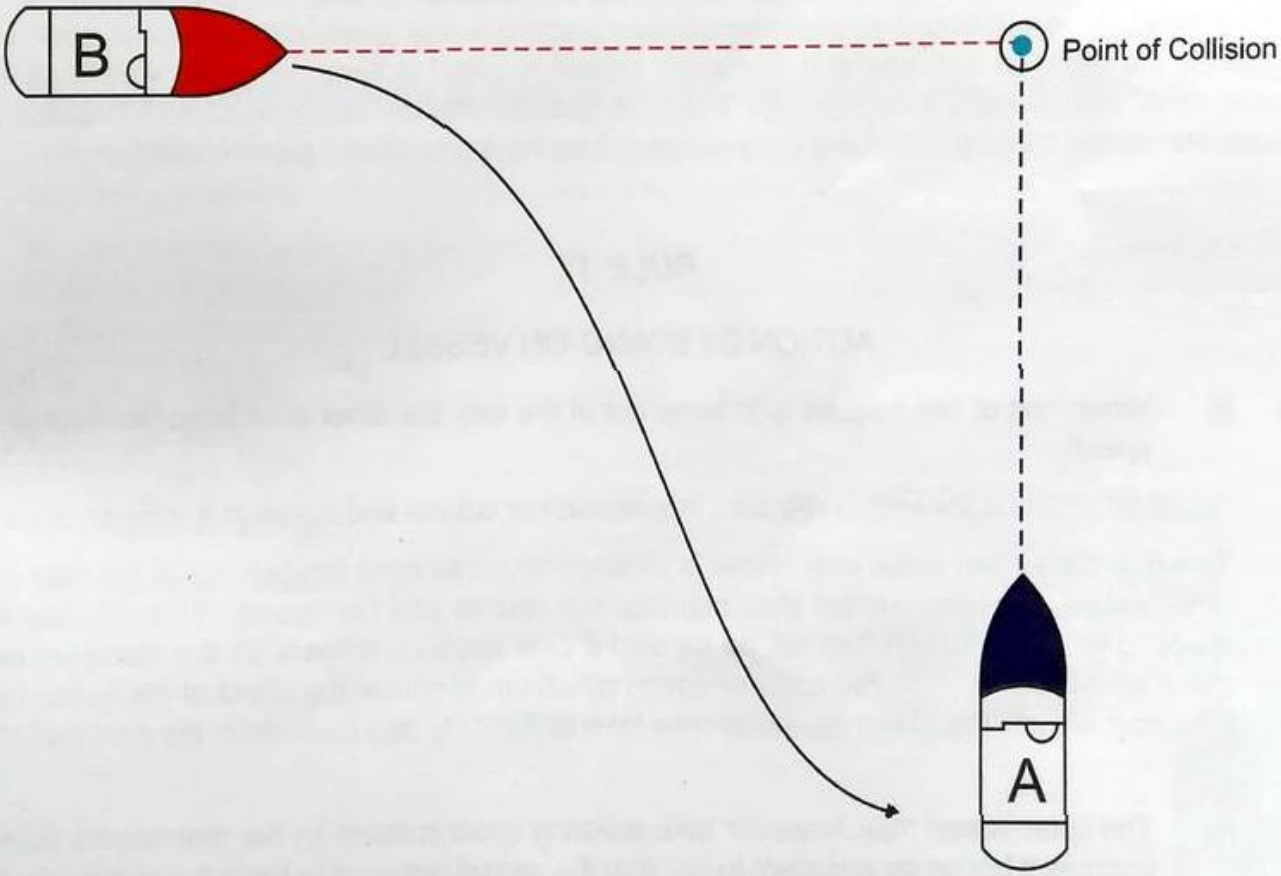
Scanned by CamScanner

## RULE 15

### CROSSING SITUATION

When two power-driven vessels are crossing so as to involve risk of collision the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

This rule applies only to power driven vessels. It does not explain the meaning of 'crossing situation' but we know that when a vessel is going to pass from one side to another, (I.e. from port to starboard or starboard to port) it is considered a crossing situation. The crossing vessel could pass ahead or astern of own vessel. As long as the crossing vessel passes well ahead or astern it is acceptable but the rule explains that the vessel which has the other vessel on her own starboard side shall not cross ahead of the other vessel. The implication here is that if a vessel has another vessel on her own starboard side and they are crossing so as to involve risk of collision, then the vessel shall alter course to starboard and pass astern of the other vessel. If the course alteration is not possible due to dangers to the starboard side then speed reduction will also give the same result. The rule states that 'if the circumstances of the case admit' which means 'if possible' the crossing ahead part has to be followed. If a vessel cannot avoid crossing ahead of the other vessel which is to her starboard side, she shall take such action so that she passes well ahead of the other vessel.




**In this crossing situation, vessel B is required to alter course to starboard and pass astern of vessel A. Vessel A is required to maintain her course and speed.**



Scanned by CamScanner

## RULE 16

### ACTION BY GIVE-WAY VESSEL

Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

Give way vessel – The vessel required by these rules to keep out of the way of the other vessel to avoid a collision.

This rule requires vessels, which are to take action to avoid a collision should take avoiding action as early as possible and also to ensure that the action is substantial to keep out of the way of the other vessel.

If the vessel which is required to take action waits to take avoiding action until the two vessels are very close, the other vessel may get confused as to whether the vessel required to take action is going to take action or not and this may create a panic situation where in a wrong action could result in a collision. This means that when the action is taken well in advance the other vessel will know that avoiding action has been taken and she can continue on her course. It will also give time to assess the effectiveness of the action.

The rule also requires the action to be substantial. It means that a small alteration of course or speed may give the desired results but the other vessel may be confused if the action is taken at all or if it is sufficient and this could lead to a confusion wherein a wrong action taken in the panic situation could aggravate the situation and lead to a collision. Vessel required to keep out of the way shall avoid several small alterations at short intervals. It is quite possible that the vessel required to maintain her course and speed may be observing by radar, gyro bearing or visual and get confused.

## RULE 17

### ACTION BY STAND-ON VESSEL

(a) (i) When one of two vessels is to keep out of the way the other shall keep her course and speed.

Stand-on vessel is the vessel required to maintain her course and speed in a collision situation.

This rule states that when one vessel is directed by these rules to keep out of the way of the other vessel, the other vessel shall maintain her course and her speed. This rule has been made to avoid confusion that will be caused if over cautious officers on the stand-on vessel make an alteration of course and / or speed which could cancel the effect of the action by the give way vessel. The stand on vessel may take action only as explained in the next part of this rule.

(ii) The latter vessel may, however, take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

The stand on vessel may take action only under this part of the rule. When the stand on vessel



Scanned by CamScanner

determines that the give way vessel is not taking action she can take such action to avoid collision as will result in passing at a safe distance. She will have to monitor the give way vessel which may start taking avoiding action at a later stage.

(b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

The stand on vessel may also take avoiding action to prevent a collision when she finds the action taken by the give way vessel is not sufficient to avoid a collision or the circumstances may be such that action by the stand on vessel will help in the safe passing between the ships.

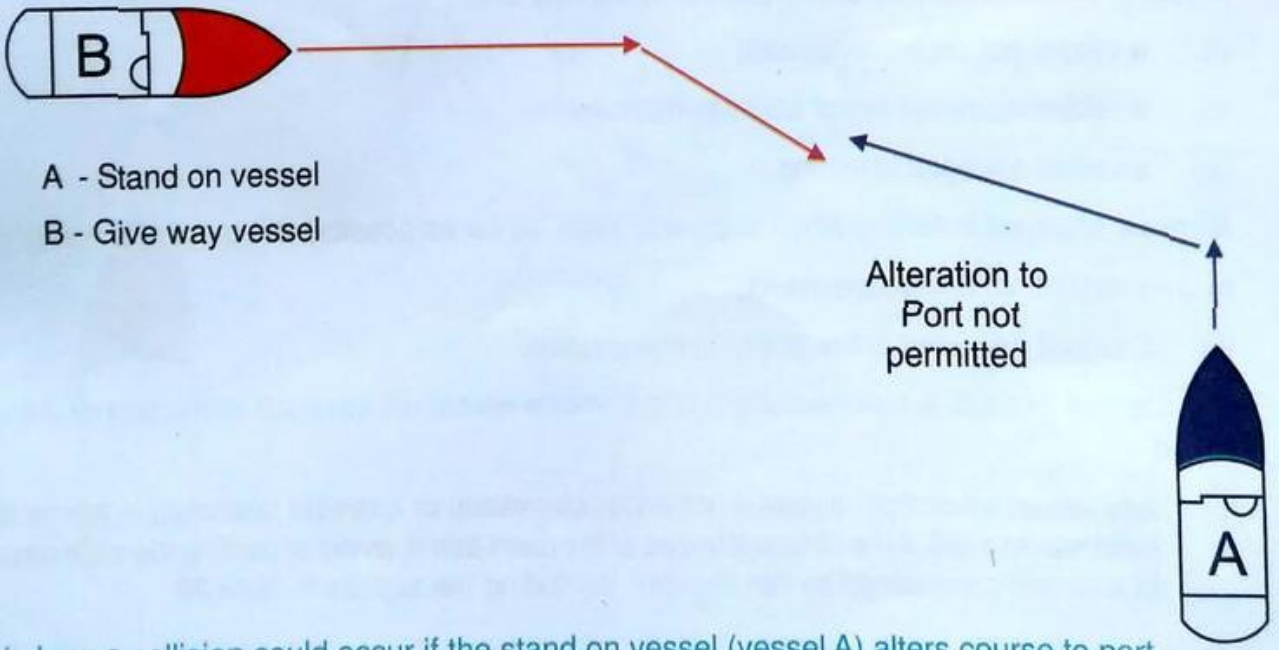
(c) A power-driven vessel which takes action in a crossing situation in accordance with sub-paragraph (a)(ii) of this Rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

In a crossing situation we have seen that as per rule 15, the vessel which has the other vessel on her starboard side, shall alter course and avoid passing ahead of the other vessel. This implies that the give way vessel will have to alter to starboard side. If the give way vessel in a crossing situation is not taking avoiding action, then the stand on vessel, when she takes avoiding action as authorised by this rule, shall not alter course to port. This is because if the stand on vessel alters to port and at the same time the give way vessel decides to take action as per these rules, she will alter to starboard and this will result in a head on situation and collision.

(d) This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

This part of the rule explains that just because the stand on vessel has taken action, it does not relieve the give way vessel of her obligation (duty) to keep clear.

This implies that even after the stand on vessel has taken avoiding action, if there is still a collision, the give way vessel will be held responsible for not having complied with her duties for collision avoidance.




This is how a collision could occur if the stand on vessel (vessel A) alters course to port.



Scanned by CamScanner

## RULE 18

### RESPONSIBILITIES BETWEEN VESSELS

Except where Rules 9, 10 and 13 otherwise require:

We have already covered rules 9, 10, 13.

They are as follows;

Rule 9 – Narrow channels,

Rule 10 – Traffic separation schemes

Rule 13 – Overtaking

In the above first two rules we have seen that a power driven vessels passage is not to be impeded by sailing vessels, fishing vessels, vessels restricted in her ability to manoeuvre, only within a a Narrow channel and fairway and a traffic separation scheme.

Rule 13 is clear on the requirement that an overtaking vessel will keep clear of the vessel being over taken, whatever be the case.

(a) A power-driven vessel underway shall keep out of the way of:

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre;

(iii) a vessel engaged in fishing;

(iv) a sailing vessel.

Except as per the requirements of rule 9, 10, 13, a power driven vessel will keep clear of these four types of vessels.

(b) A sailing vessel underway shall keep out of the way of :

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre;

(iii) a vessel engaged in fishing.

(c) A vessel engaged in fishing when underway shall, so far as possible keep out of the way of :

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre.

The basis of this rule is that the more manoeuvrable vessel will keep out of the way of the other vessel.

(d) (i) Any vessel other than a vessel not under command or a vessel restricted in her ability to manoeuvre shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draught, exhibiting the signals in Rule 28.



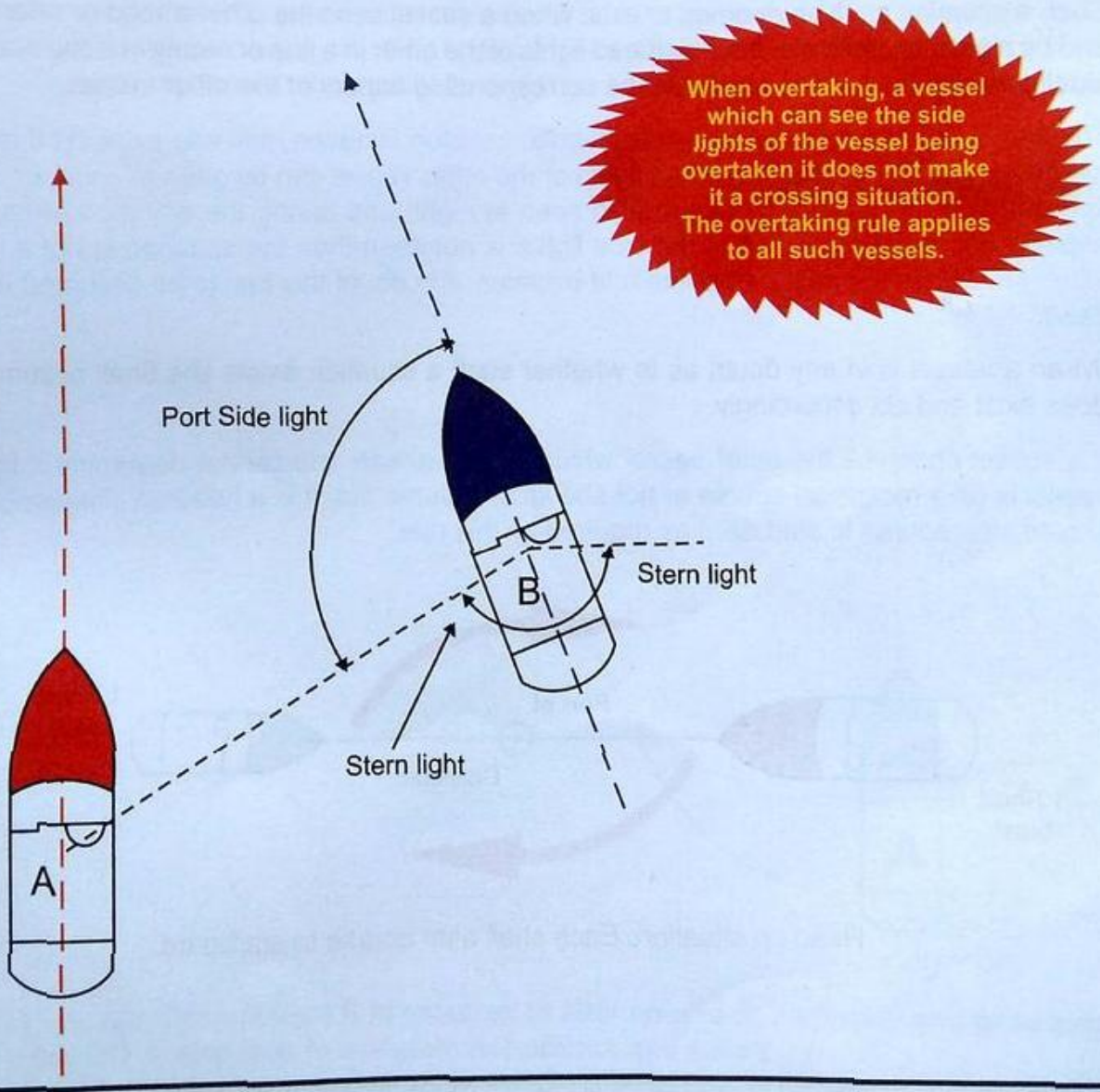
Scanned by CamScanner

(c) When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.

If there is a doubt whether the situation is a crossing situation or not, then the vessel will assume that it is a crossing situation and take action to avoid collision. This requirement has been made to avoid a situation wherein a vessel does not, erroneously, consider itself to be a crossing vessel and expect the other vessel to take avoiding action, which might then result in an accident.

(d) Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

As this rule has explained, in an overtaking situation the overtaking vessel will see only the stern light of the overtaken vessel. Subsequently as the overtaking vessel comes abeam of the overtaken vessel, she will be able to see the side lights of the other vessel. This will not change the overtaking situation into a crossing situation and the overtaking vessel will remain responsible for the safe passing until she has safely passed the overtaken vessel. (See diagram below)


When overtaking, a vessel which can see the side lights of the vessel being overtaken it does not make it a crossing situation. The overtaking rule applies to all such vessels.
Port Side light
Stern light
Stern light
A
B



Scanned by CamScanner

## RULE 14

### HEAD-ON SITUATION

(a) When two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the port side of the other.

The rule applies in situations where two power driven vessels proceeding on reciprocal (i.e. courses which have a difference of nearly 180 deg) courses meet such that they are right ahead of each other. This will involve a risk of collision and the rule requires each vessel to alter course to starboard so as to pass on the port side of the other.

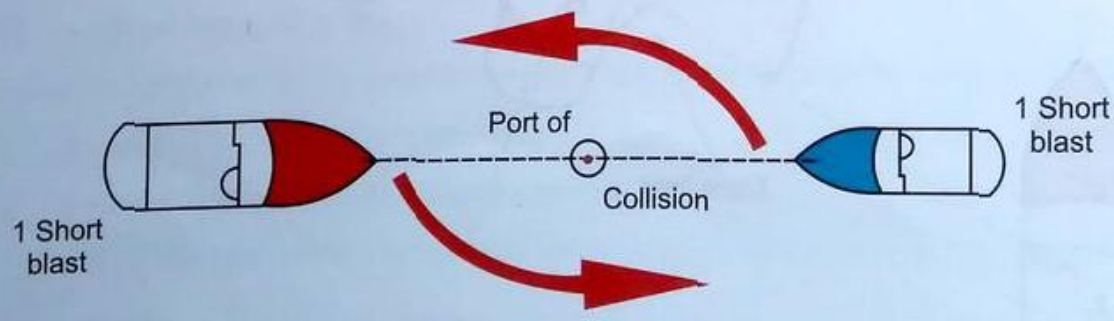
The OOW should remember that it is his duty to ensure that it is safe to alter course to the starboard side (i.e. there is sufficient sea room and there are no dangers or other vessels to starboard). Remember the instructions given in rule 2b which states that 'In construing and complying with these rules due regard shall be had to all dangers of navigation.

(b) Such a situation shall be deemed to exist when a vessel sees the other ahead or nearly ahead and by night she could see the masthead lights of the other in a line or nearly in a line and/or both sidelights and by day she observes the corresponding aspect of the other vessel.

To determine if this rule applies to a particular collision situation, this rule explains that a head situation exists when the masthead lights of the other vessel can be seen in a line or nearly in line and both of her side lights are also seen at night, and during the day the corresponding aspects can be seen. If one of her side lights is not seen then the situation is not a head on situation. But as the next part of the rule explains, if in doubt this has to be assumed to be the case.

(c) When a vessel is in any doubt as to whether such a situation exists she shall assume that it does exist and act accordingly.

If a vessel observes the other vessel which is right ahead and cannot determine if the other vessel is on a reciprocal course or not she shall assume that it is a head on situation and she should alter course to starboard as required by this rule.




Head on situation. Each shall alter course to starboard.



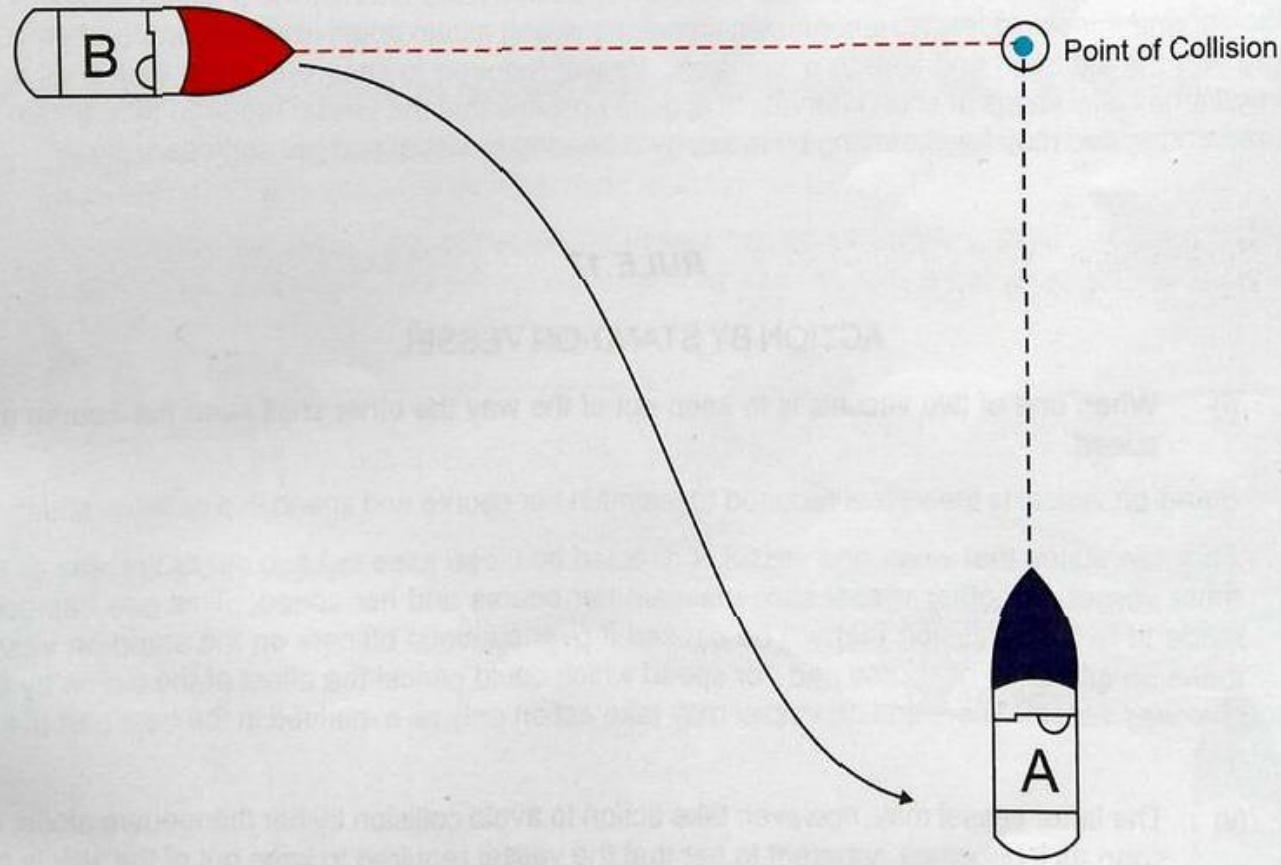
Scanned by CamScanner

## RULE 15

### CROSSING SITUATION

When two power-driven vessels are crossing so as to involve risk of collision the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

This rule applies only to power driven vessels. It does not explain the meaning of 'crossing situation' but we know that when a vessel is going to pass from one side to another, (I.e. from port to starboard or starboard to port) it is considered a crossing situation. The crossing vessel could pass ahead or astern of own vessel. As long as the crossing vessel passes well ahead or astern it is acceptable but the rule explains that the vessel which has the other vessel on her own starboard side shall not cross ahead of the other vessel. The implication here is that if a vessel has another vessel on her own starboard side and they are crossing so as to involve risk of collision, then the vessel shall alter course to starboard and pass astern of the other vessel. If the course alteration is not possible due to dangers to the starboard side then speed reduction will also give the same result. The rule states that 'if the circumstances of the case admit' which means 'if possible' the crossing ahead part has to be followed. If a vessel cannot avoid crossing ahead of the other vessel which is to her starboard side, she shall take such action so that she passes well ahead of the other vessel.




**In this crossing situation, vessel B is required to alter course to starboard and pass astern of vessel A. Vessel A is required to maintain her course and speed.**



Scanned by CamScanner

## RULE 16

### ACTION BY GIVE-WAY VESSEL

Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

Give way vessel – The vessel required by these rules to keep out of the way of the other vessel to avoid a collision.

This rule requires vessels, which are to take action to avoid a collision should take avoiding action as early as possible and also to ensure that the action is substantial to keep out of the way of the other vessel.

If the vessel which is required to take action waits to take avoiding action until the two vessels are very close, the other vessel may get confused as to whether the vessel required to take action is going to take action or not and this may create a panic situation where in a wrong action could result in a collision. This means that when the action is taken well in advance the other vessel will know that avoiding action has been taken and she can continue on her course. It will also give time to assess the effectiveness of the action.

The rule also requires the action to be substantial. It means that a small alteration of course or speed may give the desired results but the other vessel may be confused if the action is taken at all or if it is sufficient and this could lead to a confusion wherein a wrong action taken in the panic situation could aggravate the situation and lead to a collision. Vessel required to keep out of the way shall avoid several small alterations at short intervals. It is quite possible that the vessel required to maintain her course and speed may be observing by radar, gyro bearing or visual and get confused.

## RULE 17

### ACTION BY STAND-ON VESSEL

(a) (i) When one of two vessels is to keep out of the way the other shall keep her course and speed.

Stand-on vessel is the vessel required to maintain her course and speed in a collision situation.

This rule states that when one vessel is directed by these rules to keep out of the way of the other vessel, the other vessel shall maintain her course and her speed. This rule has been made to avoid confusion that will be caused if over cautious officers on the stand-on vessel make an alteration of course and / or speed which could cancel the effect of the action by the give way vessel. The stand on vessel may take action only as explained in the next part of this rule.

(ii) The latter vessel may, however, take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

The stand on vessel may take action only under this part of the rule. When the stand on vessel



Scanned by CamScanner

determines that the give way vessel is not taking action she can take such action to avoid collision as will result in passing at a safe distance. She will have to monitor the give way vessel which may start taking avoiding action at a later stage.

(b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

The stand on vessel may also take avoiding action to prevent a collision when she finds the action taken by the give way vessel is not sufficient to avoid a collision or the circumstances may be such that action by the stand on vessel will help in the safe passing between the ships.

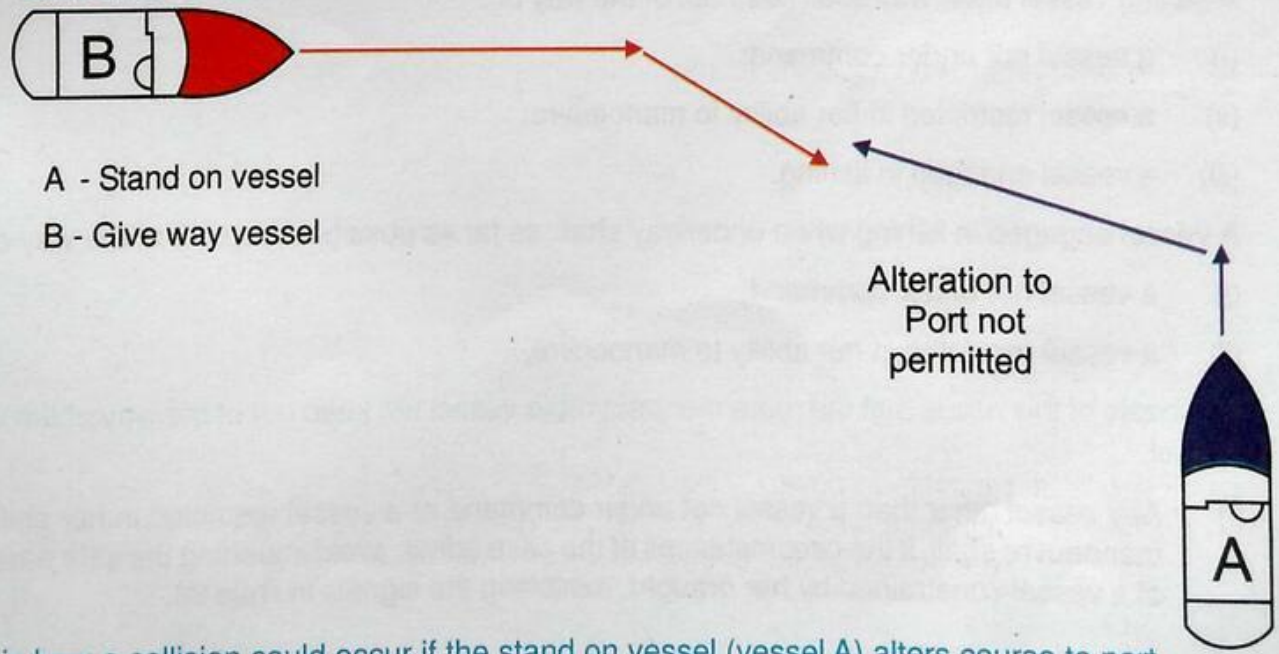
(c) A power-driven vessel which takes action in a crossing situation in accordance with sub-paragraph (a)(ii) of this Rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

In a crossing situation we have seen that as per rule 15, the vessel which has the other vessel on her starboard side, shall alter course and avoid passing ahead of the other vessel. This implies that the give way vessel will have to alter to starboard side. If the give way vessel in a crossing situation is not taking avoiding action, then the stand on vessel, when she takes avoiding action as authorised by this rule, shall not alter course to port. This is because if the stand on vessel alters to port and at the same time the give way vessel decides to take action as per these rules, she will alter to starboard and this will result in a head on situation and collision.

(d) This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

This part of the rule explains that just because the stand on vessel has taken action, it does not relieve the give way vessel of her obligation (duty) to keep clear.

This implies that even after the stand on vessel has taken avoiding action, if there is still a collision, the give way vessel will be held responsible for not having complied with her duties for collision avoidance.




This is how a collision could occur if the stand on vessel (vessel A) alters course to port.



Scanned by CamScanner

## RULE 18

### RESPONSIBILITIES BETWEEN VESSELS

Except where Rules 9, 10 and 13 otherwise require:

We have already covered rules 9, 10, 13.

They are as follows;

Rule 9 – Narrow channels,

Rule 10 – Traffic separation schemes

Rule 13 – Overtaking

In the above first two rules we have seen that a power driven vessels passage is not to be impeded by sailing vessels, fishing vessels, vessels restricted in her ability to manoeuvre, only within a a Narrow channel and fairway and a traffic separation scheme.

Rule 13 is clear on the requirement that an overtaking vessel will keep clear of the vessel being over taken, whatever be the case.

(a) A power-driven vessel underway shall keep out of the way of:

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre;

(iii) a vessel engaged in fishing;

(iv) a sailing vessel.

Except as per the requirements of rule 9, 10, 13, a power driven vessel will keep clear of these four types of vessels.

(b) A sailing vessel underway shall keep out of the way of :

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre;

(iii) a vessel engaged in fishing.

(c) A vessel engaged in fishing when underway shall, so far as possible keep out of the way of :

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre.

The basis of this rule is that the more manoeuvrable vessel will keep out of the way of the other vessel.

(d) (i) Any vessel other than a vessel not under command or a vessel restricted in her ability to manoeuvre shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draught, exhibiting the signals in Rule 28.



Scanned by CamScanner

We know that a vessel which is constrained by her draft will be severely restricted in her ability to manoeuvre which will depend on the available sea room. The vessel not under command should navigate with special caution taking into account her special condition and hence take appropriate action to keep clear of the vessel constrained by her draft.

(ii) A vessel constrained by her draught shall navigate with particular caution having full regard to her special condition.

The rule does not allow the vessel constrained by her draft to navigate as she pleases, but requires her to navigate with extra caution taking into consideration her special condition.

(e) A seaplane on the water shall, in general, keep well clear of all vessels and avoid impeding their navigation. In circumstances, however, where risk of collision exists, she shall comply with the Rules of this part.

A seaplane on the water will normally navigate away from surface craft. If there is a situation where she is involved in a collision situation with another vessel then the normal collision avoidance rules will apply.

(f) (i) A WIG craft shall, when taking off, landing and in flight near the surface, keep well clear of all other vessels and avoid impeding their navigation;

(ii) A WIG craft operating on the water surface shall comply with the Rules of this Part as a power driven vessel.

A WIG craft like any other seaplane, will have to comply with these rules when she is manoeuvring on the surface of the water like a normal vessel.

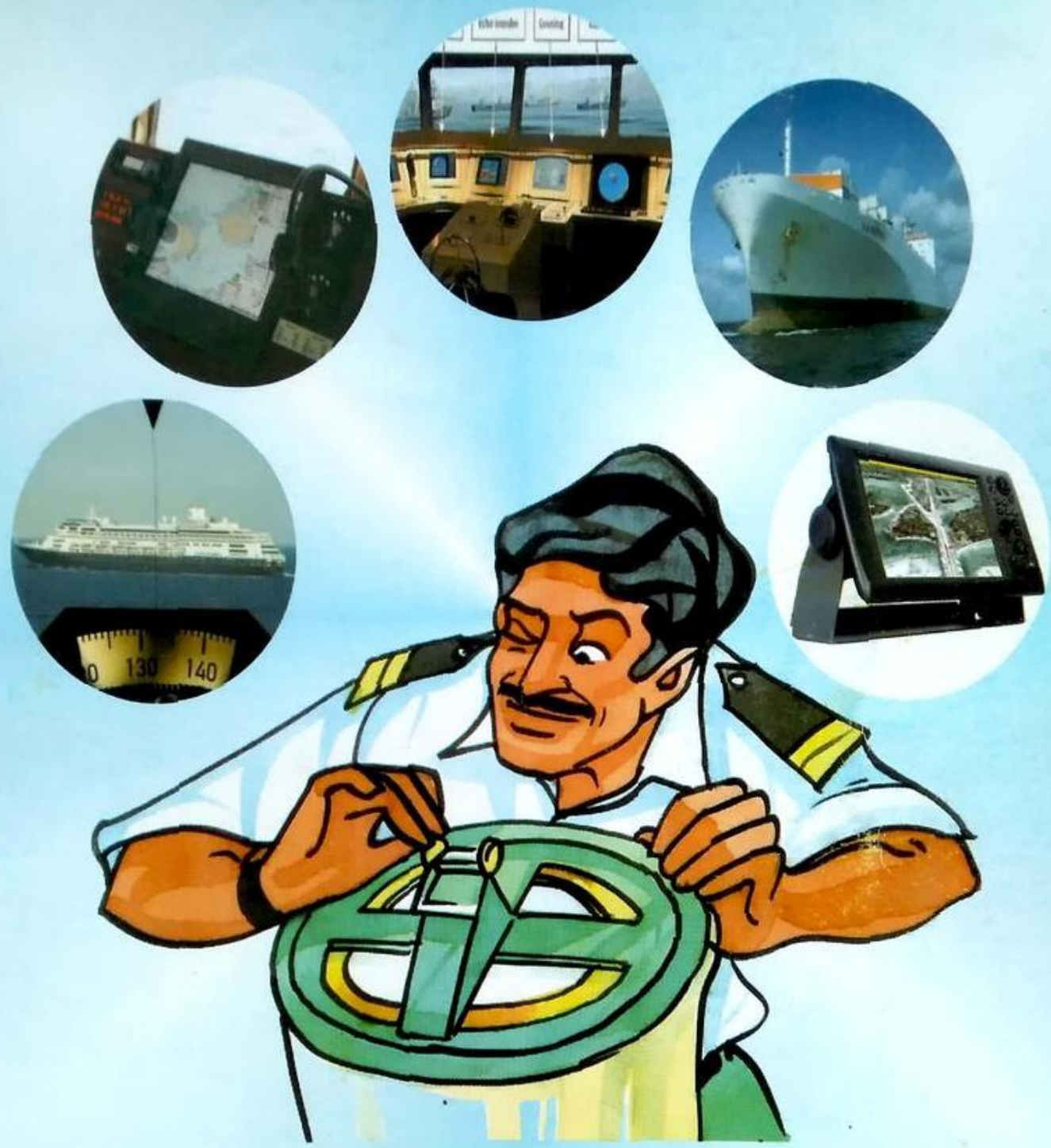


Scanned by CamScanner

NOTES



Scanned by CamScanner




# Risk of Collision

The determination of risk of collision, timely or otherwise, triggers a number of other Rules on which the mariner must act. Rule 12, for instance, requires action by one or two sailing vessels approaching each other. Rule 14 requires action in the case of power-driven vessels approaching each other so as to involve the risk of collision. Rule 15 applies to power-driven vessels crossing so as to involve risk of collision. Rule 19 prescribes action by vessels in restricted visibility when risk of collision exists and in certain cases when the degree of risk is unknown.

The taking of compass bearings is one of the most important means of determining risk of collision. The technique depends on good visibility, on the vessel being tracked maintaining a constant course, and on several observations. Observations may be taken with a simple hand-bearing compass, a pair of binoculars incorporating a magnetic compass in its optics, or on larger vessels, a bearing or azimuth circle on a fixed gyro-compass repeater.

Scanned by CamScanner

# SECTION III: CONDUCT OF VESSELS IN RESTRICTED VISIBILITY

## *RULE 19*

### CONDUCT OF VESSELS IN RESTRICTED VISIBILITY

(a) This Rule applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.

When a vessel is navigating near or in an area of restricted visibility, she will take action to avoid a collision as per this rule only.

The rule clarifies that even if a vessel is in an area of clear visibility but she is approaching an area of restricted visibility and she has to take action to avoid a collision, then such action will be as per this rule.

(b) Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. A power-driven vessel shall have her engines ready for immediate manoeuvre.

We have discussed what is safe speed in rule 6. The safe speed shall be such a speed at which the vessel can be stopped within half the range of visibility. To stop the vessel at a short notice, if required, a power driven vessel shall be able to go astern on her engines. Thus she will have to keep her engines ready for immediate manoeuvre.

(c) Every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with the Rules of Section I of this part.

The rules in Section I (rule 4 to 10) are those which are applicable in any condition of visibility. Thus while complying with those rules a vessel shall take into consideration the requirements of this rule. Thus while deciding the composition of lookouts, additional lookouts may have to be posted depending on the condition of the restricted visibility, when deciding the safe speed, lesser the visibility lesser should be the speed at which a vessel may proceed. In determining if risk of collision exists or the action to be taken to avoid a collision, the condition of the restricted visibility shall be taken into account. A vessel proceeding in a narrow channel or a fairway and a vessel using a traffic separation scheme shall comply with this rule when in restricted visibility.

(d) A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration of course, so far as possible the following shall be avoided :

This part of the rule has to be understood by all officers as it explains the action to take to avoid a collision when in restricted visibility and when the presence of the other vessel is detected by radar only. The rule requires all vessels to take avoiding action as soon as possible after having determined that a risk of collision exists because if the other vessel takes incorrect action, it will take some time before it is apparent by her movement as observed on the radar. The requirement for early avoiding action has been made so that the effectiveness of the action can be checked and if required the action can be modified to avoid a collision.



Scanned by CamScanner

(i) an alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken;

The rule prohibits an alteration of course to port for a vessel forward of the beam other than a vessel being overtaken.

Let us understand this in three parts;

A vessel forward of the beam could be on reciprocal course, may be a overtaking situation or may be crossing situation.

If it is a head on situation, then we are not allowed to alter course to port which implies that we have to alter course to starboard to avoid collision. Thus we comply with rule 14 which is not applicable in restricted visibility.

For a vessel being overtaken, there is no restriction on the action and a vessel can alter to any side as long as it results in safe passing. In rule 13 we have understood the procedure of determining if a vessel is an overtaking vessel. In restricted visibility it would not be possible to see the stern light but the vessel can use the radar to determine if she is an overtaking vessel.

For a crossing situation, if own vessel has another vessel on her starboard side which is crossing, the rule prohibits alteration of course to port. Thus we can alter course to starboard or reduce speed and allow the vessel to pass ahead. If own vessel has a crossing vessel on the port side, we are not allowed to alter to port because if the other vessel alters course subsequently, it will quickly result in a collision. Hence we can then alter course to starboard and take such action as will best help to avoid collision.

Thus you will see here that even though rule 15 – Crossing situations, applies to vessels in sight of another, we are indirectly guided to comply with the rule in restricted visibility.

(ii) an alteration of course towards a vessel abeam or abaft the beam.

A vessel abeam or abaft the beam may be overtaking us or we may be overtaking the other vessel. In both cases if we alter towards that vessel it will result in a close quarters situation and hence is prohibited.

(e) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

In this part the rule explains that if a vessel hears the fog signal of another vessel which is apparently forward of the beam, the other vessel could be approaching on reciprocal course, or crossing or may be a vessel being overtaken, and the rule requires that the vessel should immediately reduce her speed to allow more time to assess the situation and if required she should be stopped completely and then she can move with caution until danger of collision is over. If it has been determined that there is no risk of collision, then she need not take action as per this part of the rule when she hears a fog signal.

This rule stresses on reducing speed and moving cautiously as this will allow more time to assess the situation and take proper avoiding action.



Scanned by CamScanner

# Action to Avoid Collision

This Rule prescribes what to do once the risk of collision has been determined to exist. How the avoiding action must be executed, not which vessels are required to take the avoiding action. There is a general admonition to use care in avoiding collisions. Although the mandatory word "shall" appears, the paragraph also contains the escape clause "if the circumstances of the case admit." This means that in taking action you are not required to put yourself in a worse condition. Two variables can be altered to avoid collisions: course and speed. Large commercial vessels often find it easier to change course rather than to change speed, especially in open water when engine room personnel may not have taken the preliminary steps for speed changes. This rule directs vessels to slow down or stop to avoid a collision or to give more time in which to determine the best course of action. If in doubt, use your VHF, radiotelephone or even your whistle signal.

Scanned by CamScanner

# PART C - LIGHTS AND SHAPES

## *RULE 20*

### APPLICATION

(a) Rules in this Part shall be complied with in all weathers.

The rules regarding the lights and shapes to be displayed by vessels have to be complied with by day and night and during restricted visibility as well as normal visibility. They shall be complied with in calm weather, rough weather and in short, in all conditions.

(b) The Rules concerning lights shall be complied with from sunset to sunrise, and during such times no other lights shall be exhibited, except such lights as cannot be mistaken for the lights specified in these Rules or do not impair their visibility or distinctive character, or interfere with the keeping of a proper look-out.

The lights required to be displayed by a vessel have to be displayed during the night time (sunset to sunrise) and also during conditions of restricted visibility. Hence even though the rules do not require so, most vessels display the lights required at all times from departure port to arrival in port. Else every time there is restricted visibility the duty officer has to remember to switch on the lights as required. Also the rule requires that when the navigation lights are displayed, no other lights, which can be mistaken for navigation lights or which because of their brightness and location impair the visibility and characteristics of the lights required by these rules, be displayed. Also the other lights being used should be so placed that they do not obstruct the keeping of lookout. Hence at night when there is work on deck during sailing, we switch on only the lights facing forward this will prevent light from shining on the lookout on bridge.

(c) The lights prescribed by these Rules shall, if carried, also be exhibited from sunrise to sunset in restricted visibility and may be exhibited in all other circumstances when it is deemed necessary.

The rule recommends that the lights required to be displayed shall also be displayed from sunrise to sunset, i.e. during the day, and also at other times when it may be necessary.

We have explained this fact in the earlier paragraph that most vessels prefer to display the navigation lights from departure port to arrival alongside a berth. There is no restriction to navigation lights being on during day.

(d) The Rules concerning shapes shall be complied with by day.

The shapes which are required to be displayed by these rules shall be displayed during the day time. A vessel which is required to display the shapes may prefer to display them at all times but they must be displayed from sunrise to sunset.

(e) The lights and shapes specified in these Rules shall comply with the provisions of Annex I to these Regulations.

The rules regarding specifications of the navigation lights, their positioning on board, the screening requirements etc and the regulations regarding the colour and size of the shapes shall be as prescribed in Annex I of these rules.



Scanned by CamScanner

## RULE 21

### DEFINITIONS

(a) "Masthead light" means a white light placed over the fore and aft centreline of the vessel showing an unbroken light over an arc of the horizon of 225 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of the vessel.

The Masthead light/s required to be displayed by these rules is a white coloured light.

The light is so screened that it shows a light over an arc of 225 degrees (i.e it is blanked out over 135 degrees, of the possible 360 degrees).

The light is so placed on the fore and aft centre line such that it can bee seen from right ahead to abeam and then 22.5 degrees abaft the beam.

(b) "Sidelights" means a green light on the starboard side and a red light on the port side each showing an unbroken light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on its respective side. In a vessel of less than 20 metres in length the sidelights may be combined in one lantern carried on the fore and aft centreline of the vessel.

The sidelights required to be displayed are a green light to starboard and a red light to port side.

The light shows an unbroken light over an arc of the horizon of 112.5 degrees only.

The light is so placed that the light can be seen from right ahead to 22.5 degrees abaft the beam on the respective side. (Green to starboard and red to port)

(c) "Sternlight" means a white light placed as nearly as practicable at the stern showing an unbroken light over an arc of the horizon of 135 degrees and so fixed as to show the light 67.5 degrees from right aft on each side of the vessel.



Scanned by CamScanner

The sternlight is a white light.

The light shows an unbroken light over an arc of the horizon of 135 degrees.

The light is so placed on the fore and aft centre line of the vessel as to show the light from right astern to 67.5 degrees on each side.

(d) "Towing light" means a yellow light having the same characteristics as the "Sternlight" defined in paragraph (c) of this Rule.

The towing light required to be displayed by a vessel engaged in towing is a yellow coloured light and it will show an unbroken light over the arc of horizon of 135 degrees and so placed as to be seen from right astern to 67.5 degrees on either side.

(e) "All-round light" means a light showing an unbroken light over an arc of the horizon of 360 degrees.

An allround light is a light which can be seen over 360 degrees of the horizon. The allround light has no sectors and hence is not obstructed over any arc of the horizon.

(f) "Flashing light" means a light flashing at regular intervals at a frequency of 120 flashes or more per minute.

A flashing light as required by these rules is a light flashing at the rate of 120 flashes or more per minute.



Scanned by CamScanner

## RULE 22

### VISIBILITY OF LIGHTS

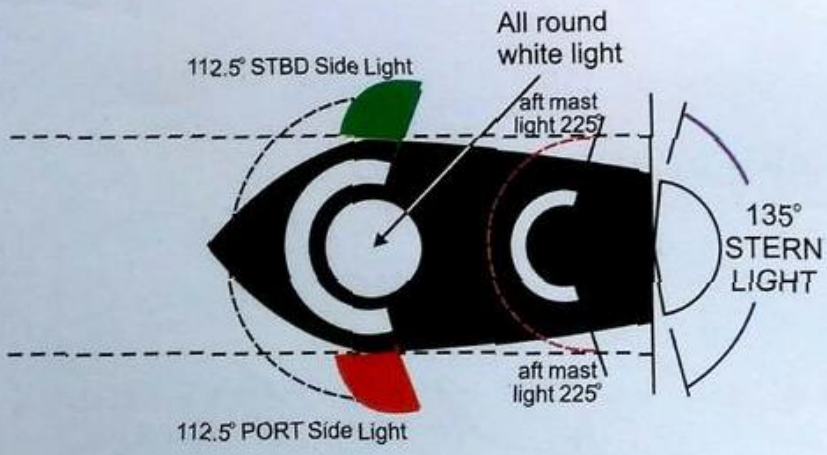
The lights prescribed in these Rules shall have an intensity as specified in Section 8 of Annexe I to these Regulations so as to be visible at the following minimum ranges:

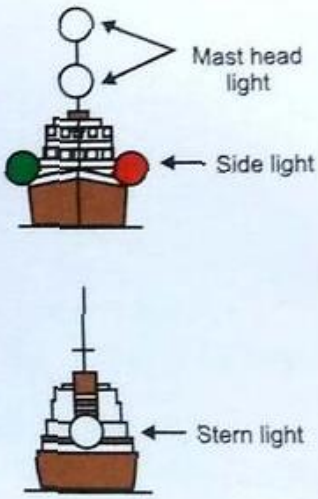
*The minimum intensity or power of the bulbs used in the navigation lights is described in Annex I section 8 of these rules.*

(a) In vessels of 50 metres or more in length:

- *a masthead light, 6 miles;*
- a sidelight, 3 miles;
- a sternlight, 3 miles;
- a towing light, 3 miles;
- a white, red, green or yellow all-round light, 3 miles.

The minimum range at which the lights displayed by a vessel of more than 50 metres in length should be seen is given in this rule. As we can see the masthead light has the highest range among the lights required to be displayed by these rules. Thus the masthead lights of a vessel more than 50 metres in length will be the first lights to be seen when the vessel is sighted.




(b) In vessels of 12 metres or more in length but less than 50 metres in length:

- a masthead light, 5 miles; except that where the length of the vessel is less than 20 metres, 3 miles;
- a sidelight, 2 miles;
- a sternlight, 2 miles;
- a towing light, 2 miles;
- a white, red, green or yellow all-round light, 2 miles.



Scanned by CamScanner

The minimum range of the lights for vessels of more than 12 metres but less than 50 metres is given in this rule. The masthead lights shall have a range of 5 miles but for smaller vessels i.e. vessel less than 20 metres, the masthead light shall have a range of 3 miles. All other lights require a minimum range of 2 miles.

(c) In vessels of less than 12 metres in length:

- a masthead light, 2 miles;
- a sidelight, 1 mile;
- a sternlight, 2 miles;
- a towing light, 2 miles;
- a white, red, green or yellow all-round light, 2 miles.

The minimum range of the lights required to be carried by a vessel less than 12 metres in length is given here. The sidelights for a vessel less than 12 metres need not have a range of more than 1 mile and the other lights are required to have a range of 2 miles.

(d) In inconspicuous, partly submerged vessels or objects being towed:

- a white all-round light, 3 miles.

For inconspicuous partly submerged vessels or objects, the white light should have a range of at least 3 miles.

## *RULE 23*

### POWER-DRIVEN VESSELS UNDERWAY

This rule prescribes the lights to be carried by power driven vessel of various descriptions as follows;

(a) A power-driven vessel underway shall exhibit:

(i) a masthead light forward;

(ii) a second masthead light abaft of and higher than the forward one; except that a vessel of less than 50 metres in length shall not be obliged to exhibit such light but may do so;

(iii) sidelights;

(iv) a sternlight.

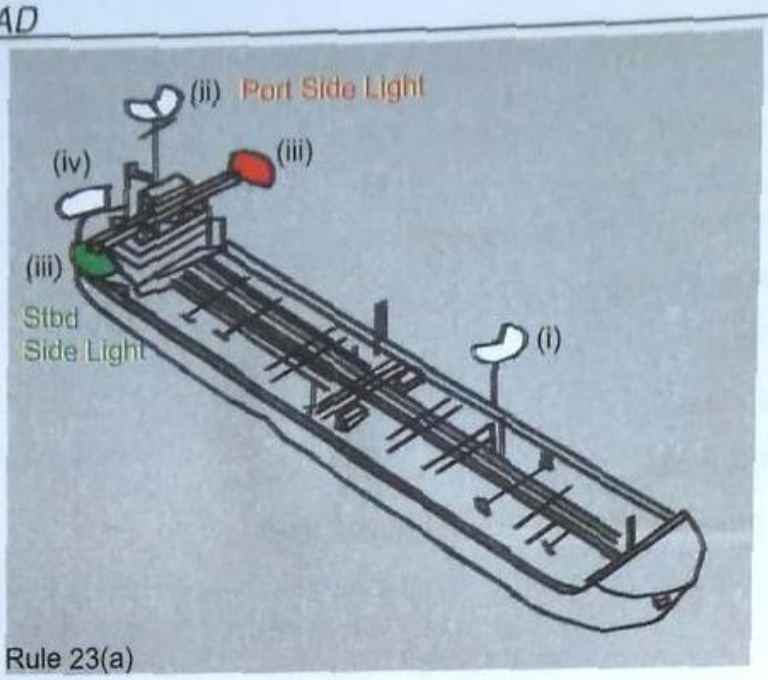
The lights required to be displayed by a power driven vessel underway of more than 50 metres in length are two masthead lights, sidelights and a sternlight.

A vessel of less than 50 metres is required to display one masthead light, the sidelights and sternlight.

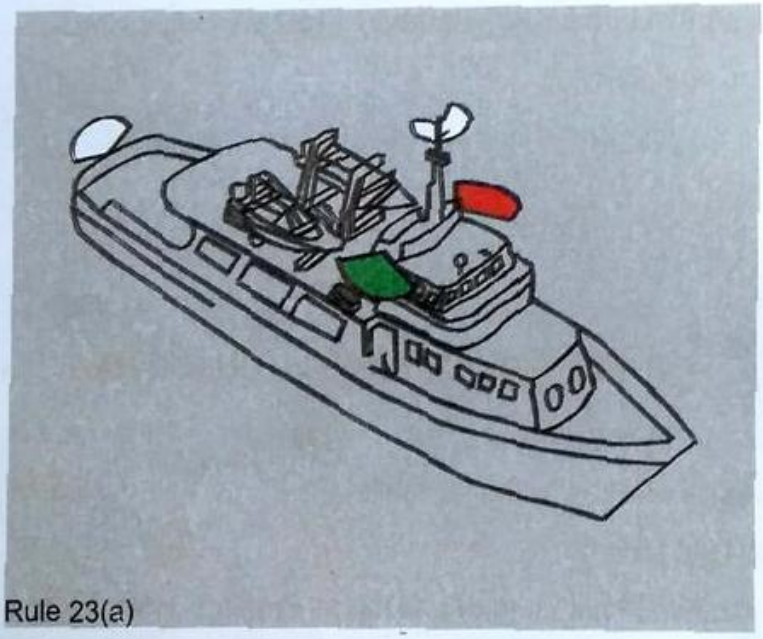
A vessel less than 50 metres in length may display the second masthead light which is required to be displayed by a vessel more than 50 metres in length.



Scanned by CamScanner




Rule 23(a)



Rule 23(a)

(b) An air-cushion vessel when operating in the non-displacement mode shall, in addition to the lights prescribed in paragraph (a) of this Rule, exhibit an all-round flashing yellow light.

A air cushion vessel (i.e. an hover craft, hydrofoil or such other vessel which has an air cushion below it and does not make direct contact with the water when it is moving) shall display the lights for a power driven vessel of her length and in addition also a flashing all round yellow light. This yellow light will help her to be identified as a vessel operating in the non displacement mode.



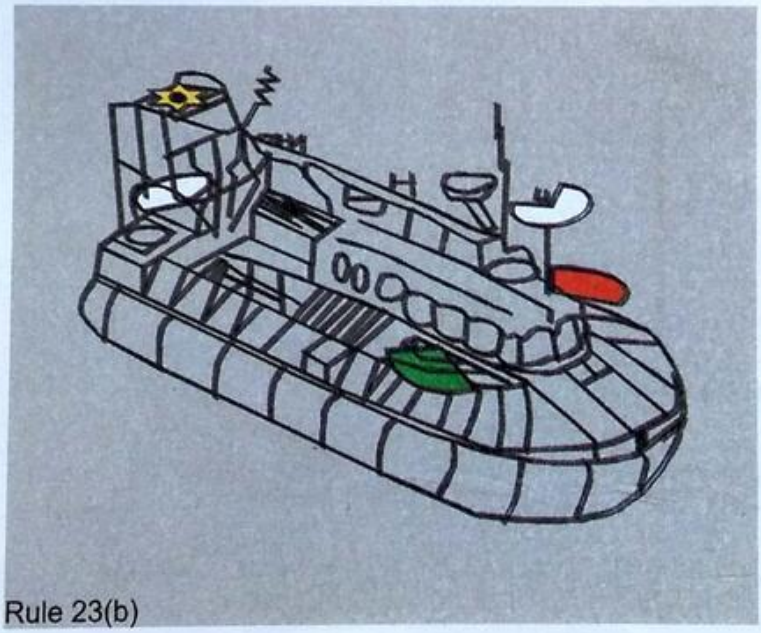
Scanned by CamScanner

Rule 23b - Hydrofoil

Rule 23b - Hovercraft

Hydrofoil is a wing like structure mounted on struts below the hull of a boat, which lifts the boat partially out of the water during forward motion, in order to reduce drag. As the craft gains speed, the hydrofoil lift the hull clear of the water.

**Hovercraft** is a small hybrid vehicle, which is a combination between a boat, and a plane. Hovercraft uses ground-effect to fly up to six feet above the ground or water.



Rule 23(b)

(c) A WIG craft only taking off, landing and in flight near the surface shall, in addition to the lights prescribed in paragraph (a) of this Rule, exhibit a high-intensity all-round flashing red light.

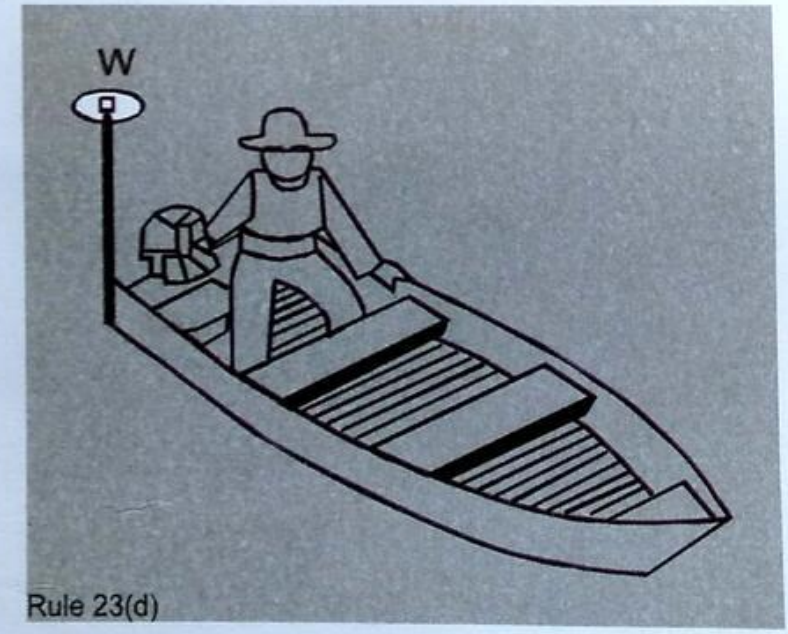
A wing-in-ground craft when she is taking off, landing or in flight near the surface of the water, will exhibit an allround flashing red light in addition to the lights required for a power driven vessel of her length. The flashing red light will help to identify her as a WIG craft. (accompanied CD Rom shows how WIG operates.)



Scanned by CamScanner

***Please view the video movie provided free with this book**

(d) (i) A power driven vessel of less than 12 metres in length may in lieu of the lights prescribed in paragraph (a) of this Rule exhibit an all-round white light and sidelights;



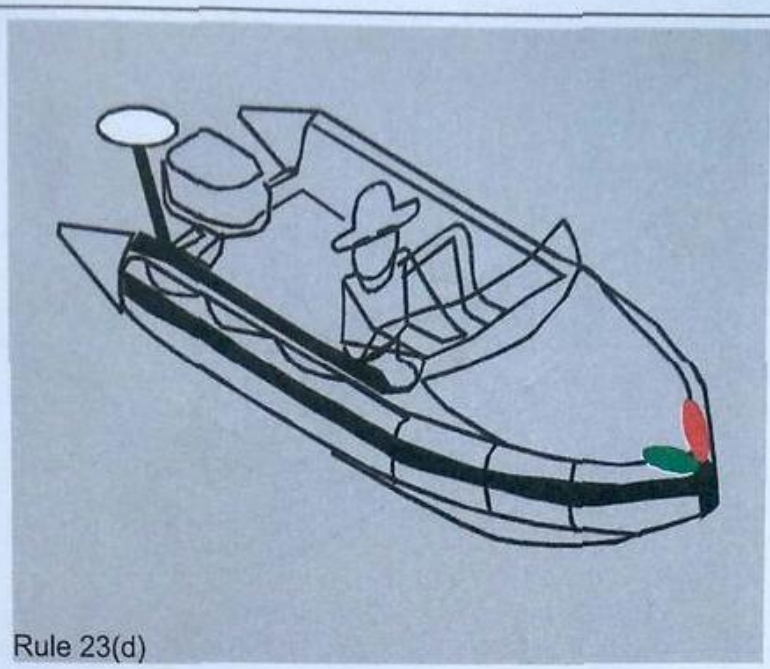

Rule 23(d)

A power driven vessel less than 12 metres in length instead of the masthead light and sternlight, shall display an allround white light and sidelights.

(ii) a power driven vessel of less than seven metres in length whose maximum speed does not exceed seven knots may in lieu of the lights prescribed in paragraph (a) of this Rule exhibit an all-round white light and shall, if practicable, also exhibit sidelights;



Scanned by CamScanner



Rule 23(d)

A power driven vessel less than 7 meters whose maximum speed does not exceed 7 knots shall display only one allround white light and if possible also sidelights.

This is the reason our life boat has one allround white light.

(iii) the masthead light or all-round white light on a power-driven vessel of less than 12 metres in length may be displaced from the fore and aft centre line of the vessel if centreline fitting is not practicable, provided that the sidelights are combined in one lantern which shall be carried on the fore and aft centreline of the vessel or located as nearly as practicable in the same fore and aft line as the masthead light or the all-round white light.

In case of a power driven vessel less than 12 metres in length the masthead light may be displaced from the fore and aft centre line. The sidelights which are in one lantern shall be carried as nearly as practicable on the fore and aft centreline or as nearly as practicable in line with the all round white light.

## *RULE 24*

### TOWING AND PUSHING

(a) A power-driven vessel when towing shall exhibit:

(i) instead of the light prescribed in Rule 23(a)(i), or (a)(ii), two masthead lights in a vertical line. When the length of the tow, measuring from the stern of the towing vessel to the after end of the tow exceeds 200 metres, three such lights in a vertical line:

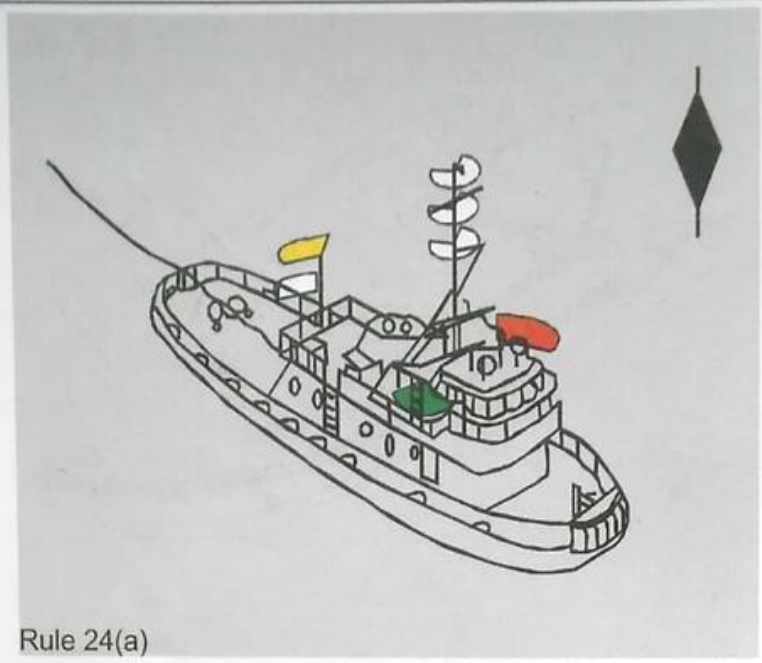
(ii) sidelights;

(iii) a sternlight;

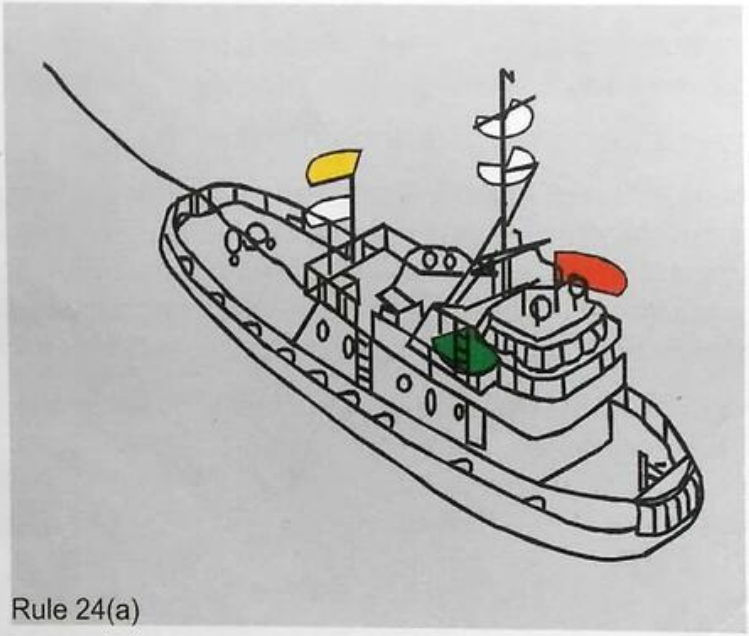
(iv) a towing light in a vertical line above the sternlight;



Scanned by CamScanner



Rule 24(a)



Rule 24(a)

(v) when the length of the tow exceeds 200 metres, a diamond shape where it can best be seen.

This rule needs to be understood thoroughly as many a times there is an error in interpreting the light shown by a power driven vessel engaged in towing operation and a normal power driven vessel.

A power driven vessel engaged in towing shall show two masthead lights in a vertical line on the foremast. If the length of the tow (i.e from the stern of the towing vessel to the stern of the tow) exceeds 200 metres then she will show three masthead lights in a vertical line on the foremast. If the towing vessel herself is more than 50 metres in length then she will show one masthead light on the main mast.



Scanned by CamScanner

A power driven vessel engaged in towing will exhibit sidelights and stern lights like a normal power driven vessel.

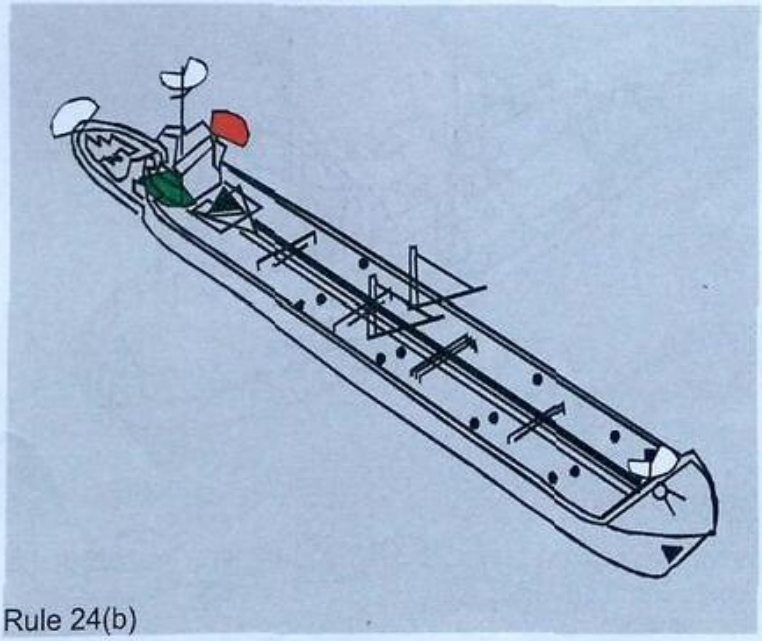
She has to exhibit a towing light above the sternlight. The towing light is a yellow light having the same arc as the sternlight.

A power driven vessel engaged in towing operation shall, if the length of the tow exceeds 200 metres, exhibit a diamond where it can best be seen. If the length of the tow is less than 200 metres then the diamond is not required to be exhibited.

(b) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and exhibit the lights prescribed in Rule 23.

Sometimes the power driven vessel may push another vessel ahead and they may be connected in such a manner that they may be considered as a rigid unit and hence she has to exhibit the lights for a normal power driven vessel.

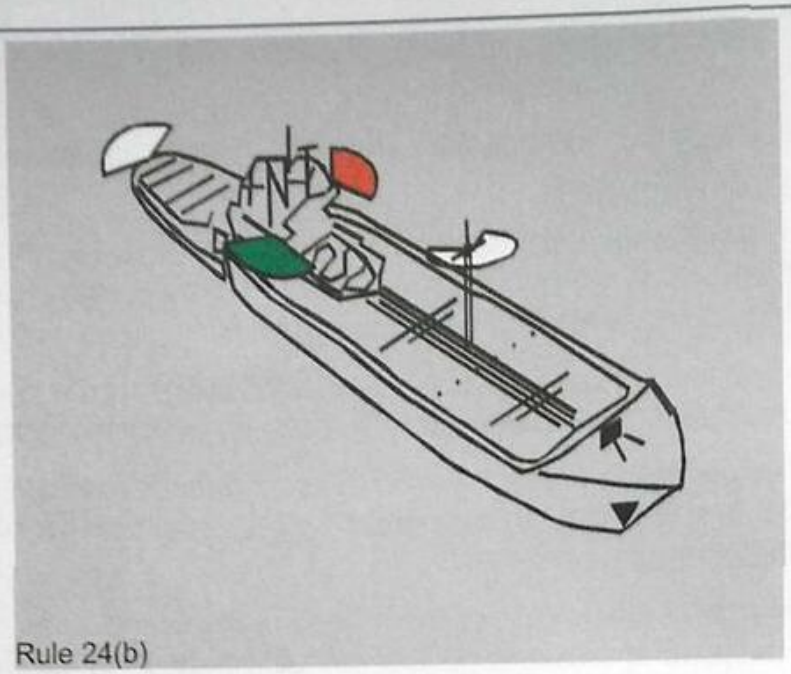
This type of an arrangement requires the aft end of the vessel to be pushed ahead and the forward end of the pushing vessel to be specially constructed so that when they are connected together they represent a single unit.



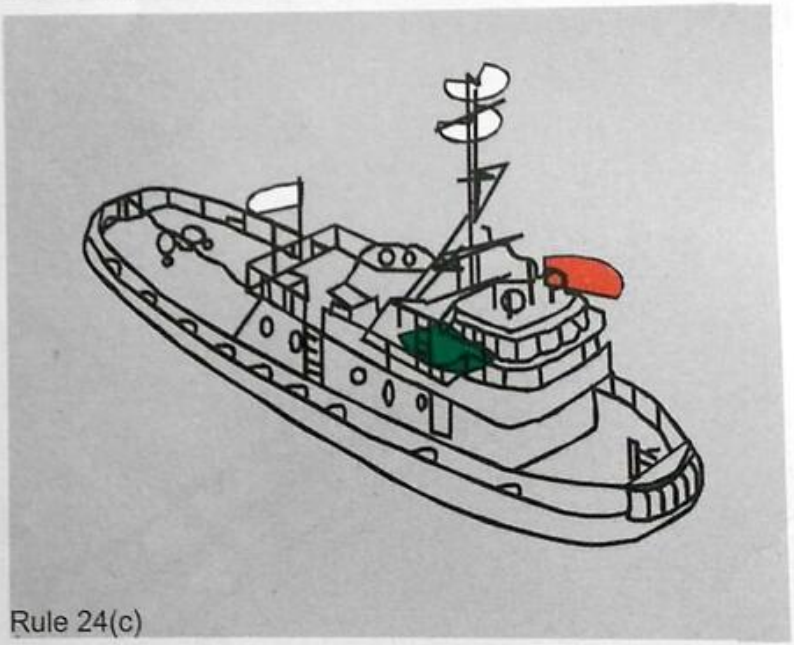
Rule 24(b)



Scanned by CamScanner



Rule 24(b)



Rule 24(c)

(c) A power-driven vessel when pushing ahead or towing alongside, except in the case of a composite unit, shall exhibit:

(i) instead of the light prescribed in Rule 23(a)(i), or (a)(ii), two masthead lights in a vertical line;

(ii) sidelights;

(iii) a sternlight,

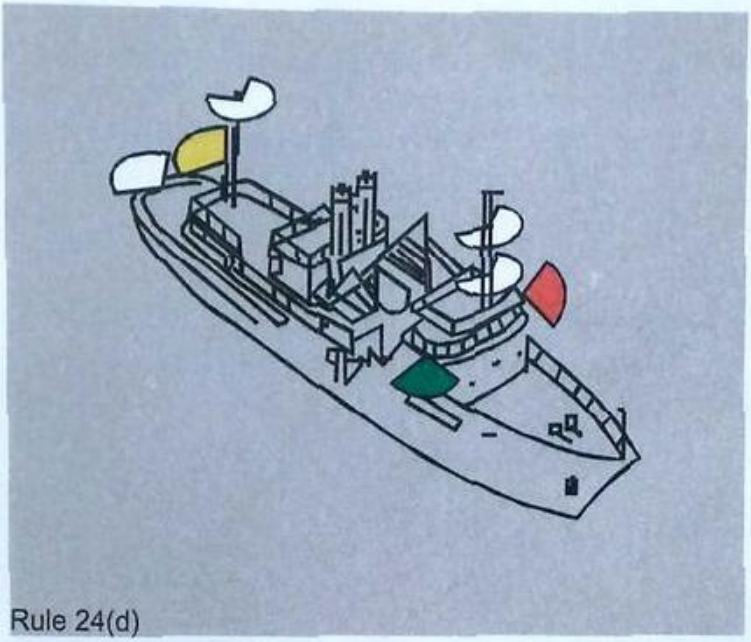
When a power driven vessel is pushing ahead (not connected rigidly as one unit) or towing alongside then she will show towing lights which are two masthead lights in a vertical line and sidelights and sternlights. She is not required to exhibit the towing light abaft and above the sternlight.



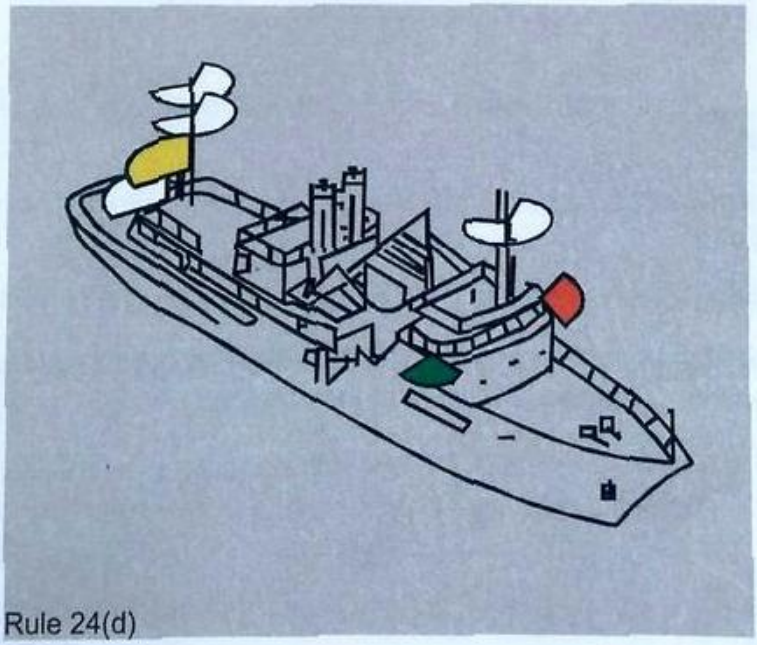
Scanned by CamScanner

(d) A power-driven vessel to which paragraph (a) or (c) of this Rule apply shall also comply with Rule 23(a)(ii).

A power driven vessel more than 50 metres in length towing another vessel astern or alongside or pushing another vessel ahead, she shall carry a second masthead light abaft off and higher then the other masthead light carried.



Rule 24(d)



Rule 24(d)



Scanned by CamScanner

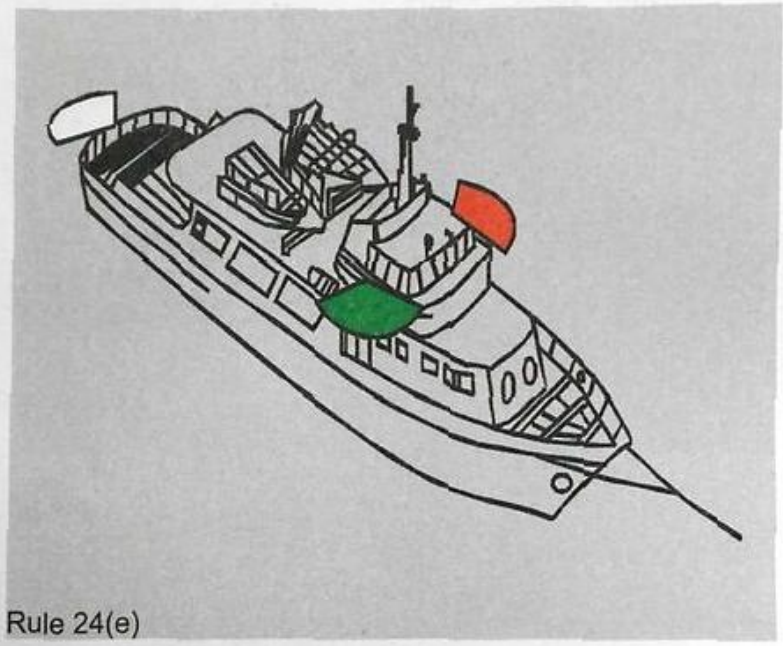
(e) A vessel or object being towed, other than those mentioned in paragraph (g) of this Rule, shall exhibit:

(i) sidelights;

(ii) a sternlight;

(iii) When the length of the tow exceeds 200 metres, a diamond shape where it can best be seen.

A vessel or barge or any other object (which is not partly submerged or inconspicuous) being towed shall exhibit sidelights and sternlights. If the length of the tow exceeds 200 metres, then she will exhibit a diamond shape. The towing vessel will also exhibit a diamond shape.



Rule 24(e)

(f) Provided that any number of vessels being towed alongside or pushed in a group shall be lighted as one vessel:

(i) a vessel being pushed ahead, not being part of a composite unit, shall exhibit at the forward end, sidelights;

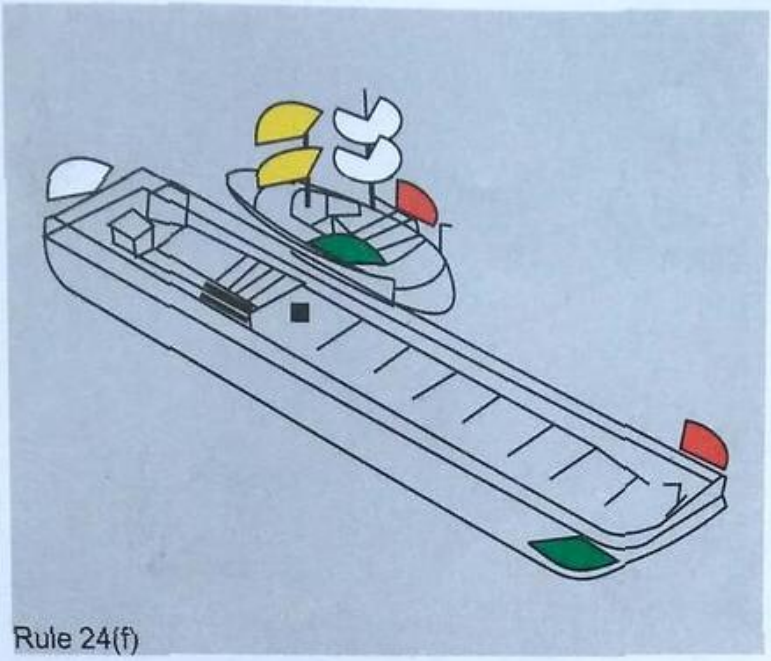
(ii) a vessel being towed alongside shall exhibit a sternlight and at the forward end, sidelights.

When vessels are being pushed ahead such that they are not connected as a unit, the forward vessel being pushed will exhibit sidelights at their forward end.

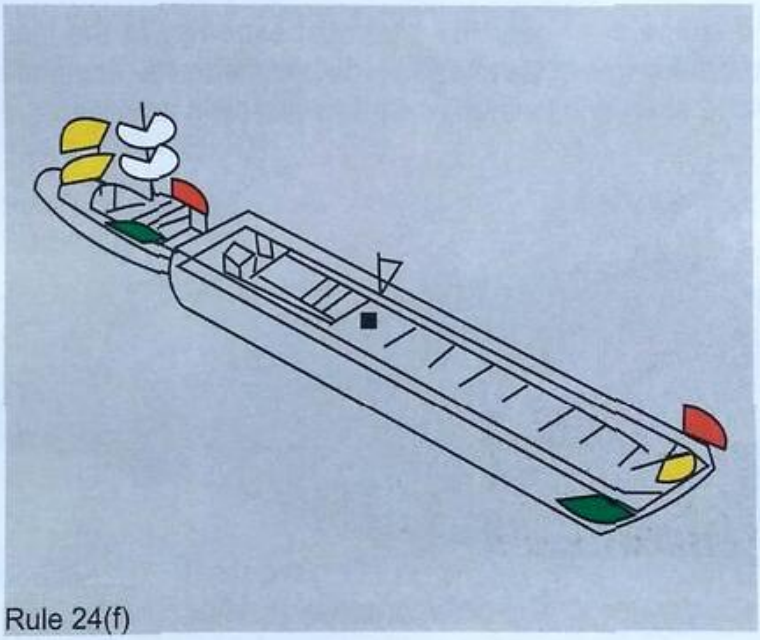


Scanned by CamScanner

When vessels are being towed alongside, they shall exhibit sternlight and sidelights.



Rule 24(f)



Rule 24(f)

(g) An inconspicuous, partly submerged vessel or object, or combination of such vessels or objects being towed, shall exhibit:

(i) if it is less than 25 metres in breadth, one all-round white light at or near the forward end and one at or near the after end except that dracones need not exhibit a light at or near the forward end;

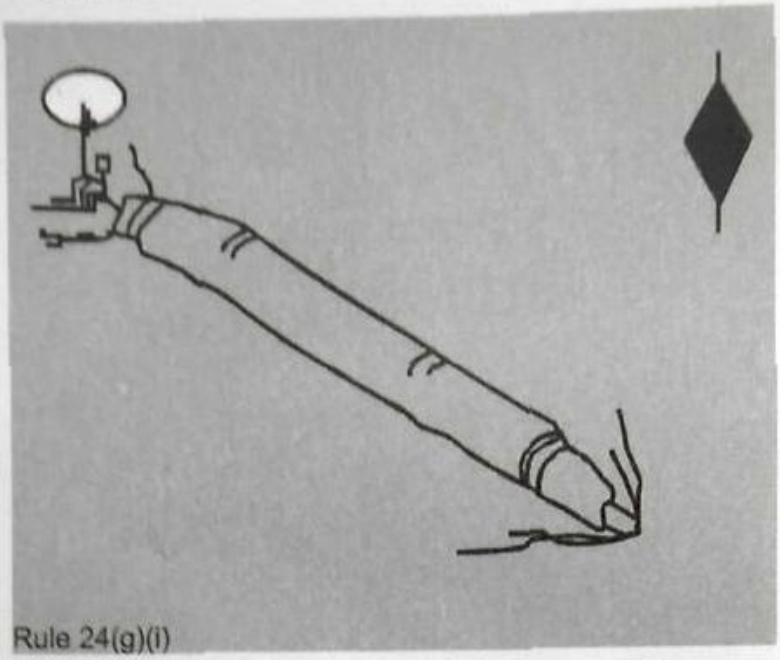
(ii) if it is 25 metres or more in breadth, two additional all round white lights at or near the extremities of its breadth;

(iii) if it exceeds 100 metres in length, additional all-round white lights between the lights



Scanned by CamScanner

prescribed in subparagraphs (i) and (ii) so that the distance between the lights shall not exceed 100 metres;



Rule 24(g)(i)

(iv) a diamond shape at or near the aftermost extremity of the last vessel or object being towed and if the length of the tow exceeds 200 metres an additional diamond shape where it can best be seen and located as far forward as is practicable.

A dracone

Dracones are towed flexible oil barges, consisting of a sausage-shaped envelope of strong woven nylon fabric coated with synthetic rubber. Since they float by reason of the buoyancy of their cargo, usually oil or petroleum products, they are almost entirely submerged. A typical tow would be 60m long on a 200m tow line.

Dracones and the vessels towing them display the signals prescribed in Rule 24(g) of the International Regulations for Preventing Collisions at Sea 1972. In addition the vessel towing, if the circumstances require, will shine a searchlight along the length of the tow.



Scanned by CamScanner

A Dracone being towed

A partly submerged or inconspicuous barge when being towed shall if her breadth is less than 25 metres, exhibit an allround white light at the forward and aft ends. A Dracone is not required to exhibit the light at the forward end.

If the breadth is more than 25 meters then she has to exhibit a white light at the port and starboard extremities of her breadth.

If the object being towed is more than 100 metres in length then she will exhibit all round white lights between the white lights explained earlier such that the distance between the lights shall not be more than 100 metres.

A diamond shape will have to be exhibited at the aft end of the tow and if the length of the tow exceeds 200 metres then a diamond shape at the forward end also.

(h) Where from any sufficient cause it is impracticable for a vessel or object being towed to exhibit the lights or shapes prescribed in paragraph (e) or (g) of this Rule, all possible measures shall be taken to light the vessel or object towed or at least to indicate the presence of such vessel or object.

If the object being towed cannot exhibit the lights or shapes required for a partly submerged inconspicuous object, then her presence will be indicated to an approaching vessel by other means such as light or sound. The difficulty arises in case of sound signals when the approaching vessel has good airconditioning then the personnel on watch indoors may not be able to hear the sound signal. Similarly in the case of light signal being displayed, it may not be sighted by an approaching vessel. It becomes imperative keep watch on the ARPA or electronic chart screen if fitted to be able to identify by AIS that a vessel exists in the vicinity.



Scanned by CamScanner

(i) Where from any sufficient cause it is impracticable for a vessel not normally engaged in towing operations to display the lights prescribed in paragraph (a) or (c) of this Rule, such vessel shall not be required to exhibit those lights when engaged in towing another vessel in distress or otherwise in need of assistance. All possible measures shall be taken to indicate the nature of the relationship between the towing vessel and the vessel being towed as authorised by Rule 36 in particular by illuminating the towline.

A vessel not normally engaged in towing operation, such as a vessel towing another vessel in distress, is not required to exhibit the towing lights. She shall indicate she is towing another vessel by other means and the towing line shall be illuminated.

## *RULE 25*

## SAILING VESSELS UNDERWAY AND VESSELS UNDER OARS

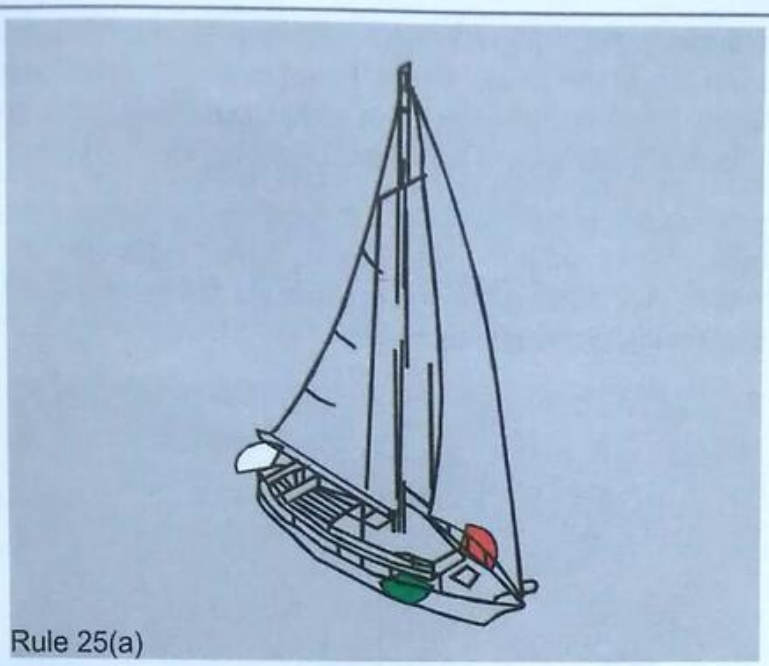
(a) A sailing vessel underway shall exhibit:

(i) sidelights;

(ii) a sternlight.

A sailing vessel is required to exhibit only sidelights and stern light. Due to the expected length of the vessel being less than 20 metres masthead lights are not required. Many owners of large pleasure crafts (sometimes of more than 20 metres) with provision of sails and powered by engines fit their vessel with a single mast. Such masts are made collapsible for convenience.

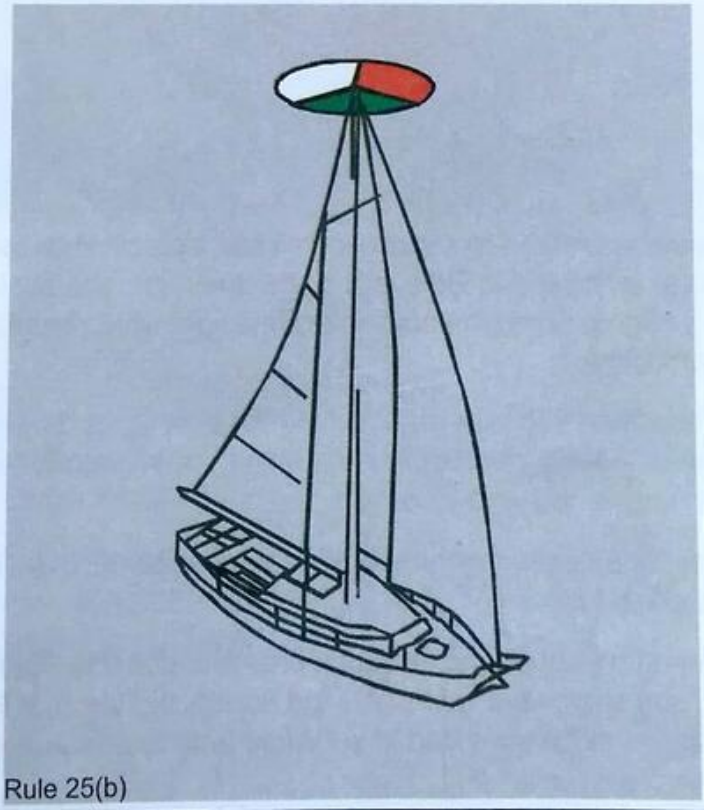
Scanned by CamScanner



Rule 25(a)

(b) In a sailing vessel of less than 20 metres in length the lights prescribed in paragraph (a) of this Rule may be combined in one lantern carried at or near the top of the mast where it can best be seen.

In a sailing vessel less than 20 meters in length the sidelights can be combined in one lantern. It means that it will be one light showing an arc of light over 225 degrees and so shaded that it shows from right ahead to 22.5 degrees abaft the beam on either side red and green light. (red to port and green to starboard). This light has to be carried at the top of the mast.



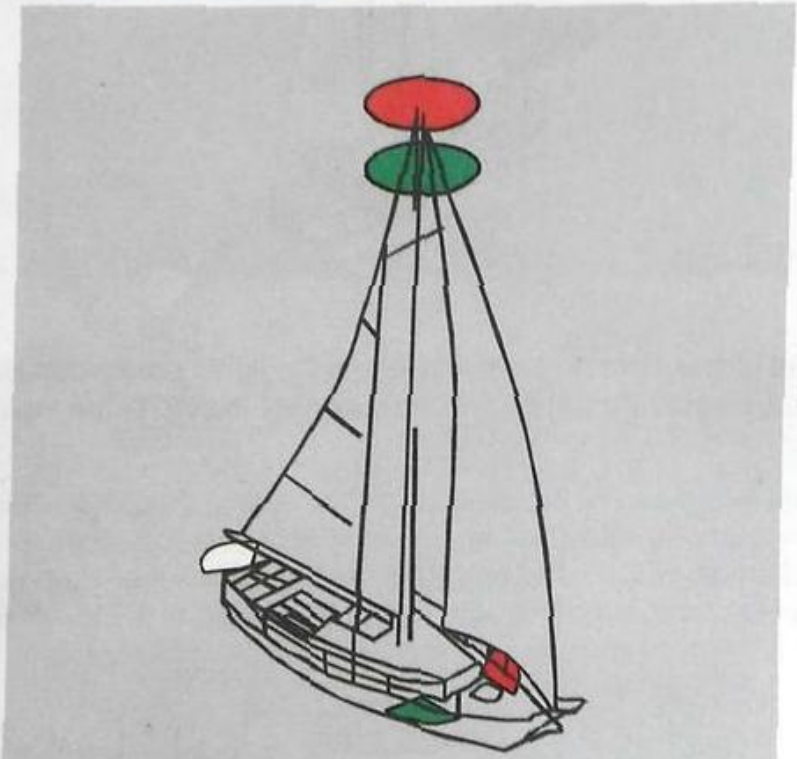
Rule 25(b)



Scanned by CamScanner

(c) A sailing vessel underway may, in addition to the lights prescribed in paragraph (a) of this Rule, exhibit at or near the top of the mast, where they can best be seen, two all-round lights in a vertical line, the upper being red and the lower green, but these lights shall not be exhibited in conjunction with the combined lantern permitted by paragraph (b) of this Rule.

A sailing vessel is allowed to exhibit optional lights on the top of the mast. The lights will be two all round lights, upper being red and lower green. These lights are not to be exhibited if the combined side lights are exhibited at the top of the mast. When she exhibits the optional lights, she will have to exhibit sidelights and stern light.



Rule 25(c)

(d) (i) A sailing vessel of less than 7 metres in length shall, if practicable, exhibit the lights prescribed in paragraph (a) or (b) of this Rule, but if she does not, she shall have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision.

A sailing vessel of less than 7 metres shall exhibit the side lights as described earlier but if she cannot then she should keep a torch or lantern which she will exhibit in good time to show her presence to another vessel to avoid a collision.

You will come across this situation where small vessels will exhibit a white light when they think you are coming too close to them.

(ii) A vessel under oars may exhibit the lights prescribed in this Rule for sailing vessels, but if she does not, she shall have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision.

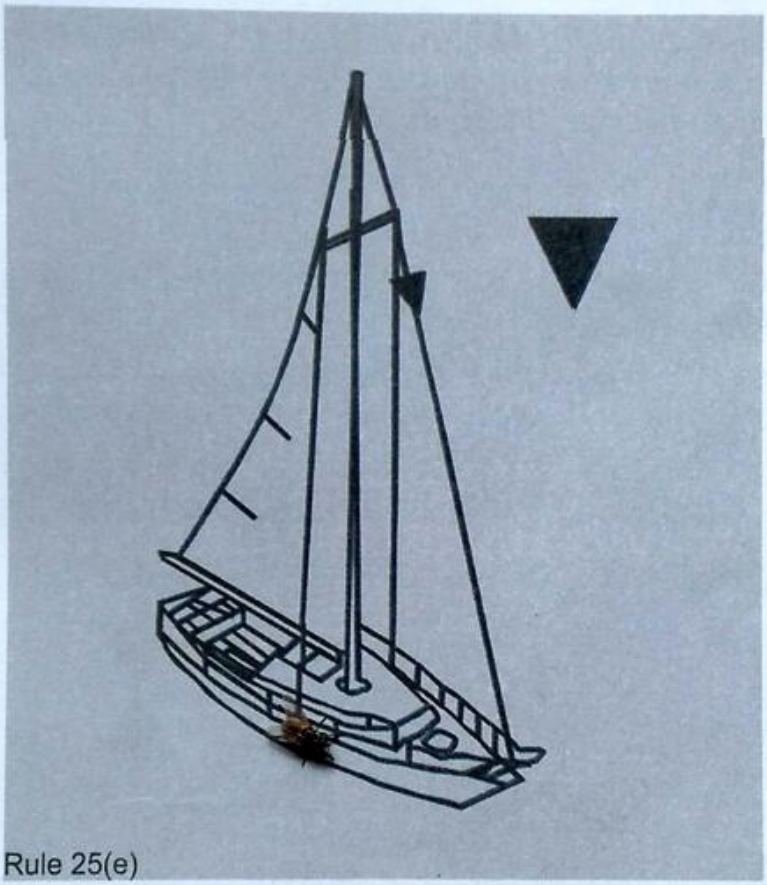


Scanned by CamScanner

A vessel proceeding under oars, shall also keep a torch or lantern ready for use. If possible she shall show side and stern lights.

(e) A vessel proceeding under sail when also being propelled by machinery shall exhibit forward where it can best be seen a conical shape, apex downwards.

A sailing vessel when using her engines, during night time, exhibit the lights of a power driven vessel and during the day, to indicate to the other vessels that she is using her engines too, she will exhibit a cone with its apex downwards.



Rule 25(e)

## *RULE 26*

### FISHING VESSELS

(a) A vessel engaged in fishing, whether underway or at anchor, shall exhibit only the lights and shapes prescribed in this Rule.

Fishing vessels are the only vessels which exhibit the same lights when underway or at anchor. This means a fishing vessel will never exhibit lights for a vessel at anchor. Likewise they will always exhibit the shapes for a vessel underway and even when at anchor will never exhibit the anchor ball.



Scanned by CamScanner

(b) A vessel when engaged in trawling, by which is meant the dragging through the water of a dredge net or other apparatus used as a fishing appliance, shall exhibit:

This rule differentiates between a vessel engaged in fishing and a vessel engaged in trawling. As explained in rule 3, a fishing vessel is a vessel fishing with nets, lines, trawls. The rule makes a difference here between a fishing vessel and a trawler. As explained, a trawler is a vessel which drags a dredge net or other fishing apparatus through the water.

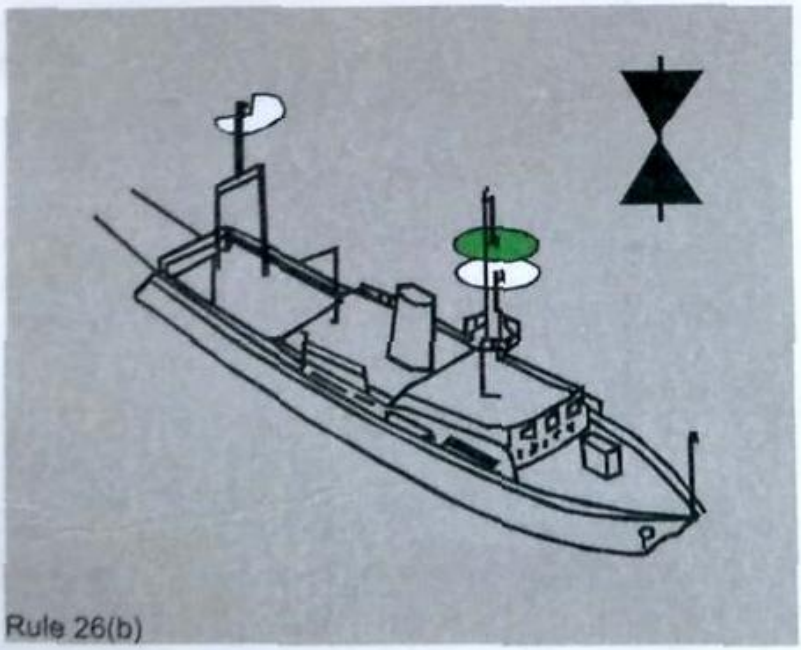
(i) two all-round lights in a vertical line, the upper being green and the lower white, or a shape consisting of two cones with their apexes together in a vertical line one above the other;

The lights to be displayed by a trawler are distinct from those of a fishing vessel. The trawler has to display two all round lights in a vertical line the upper being green and lower being white. This will help to distinguish it from a fishing vessel.

During the day a trawler will exhibit a shape consisting of two cones apexes together. This is also the shape for a fishing vessel.

(ii) a masthead light abaft of and higher than the all-round green light; a vessel of less than 50 metres in length shall not be obliged to exhibit such a light but may do so;

The trawler is also obliged to exhibit a masthead light aft of and higher than the two all round lights if she is more than 50 m in length. A trawler less then 50 m may also exhibit the masthead light.



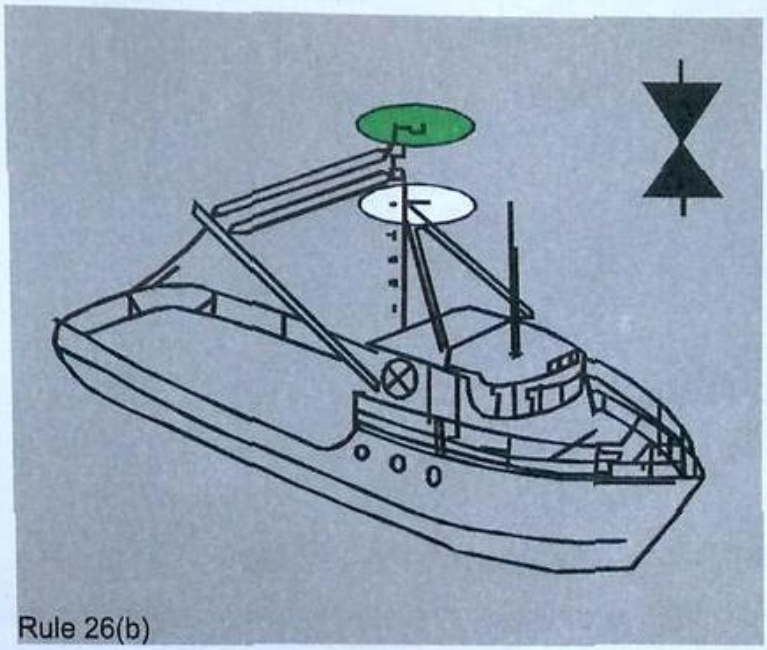
Rule 26(b)



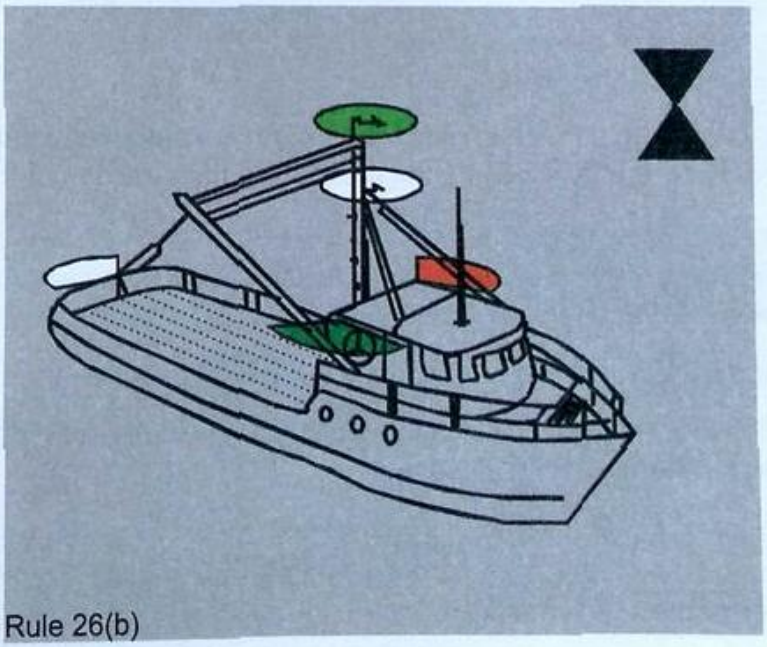
Scanned by CamScanner

(iii) when making way through the water, in addition to the lights prescribed in this paragraph sidelights and a sternlight.

The above lights have to be displayed when she is underway and when she is making way through the water (i.e. when her engines are moving) she will exhibit side and stern lights.



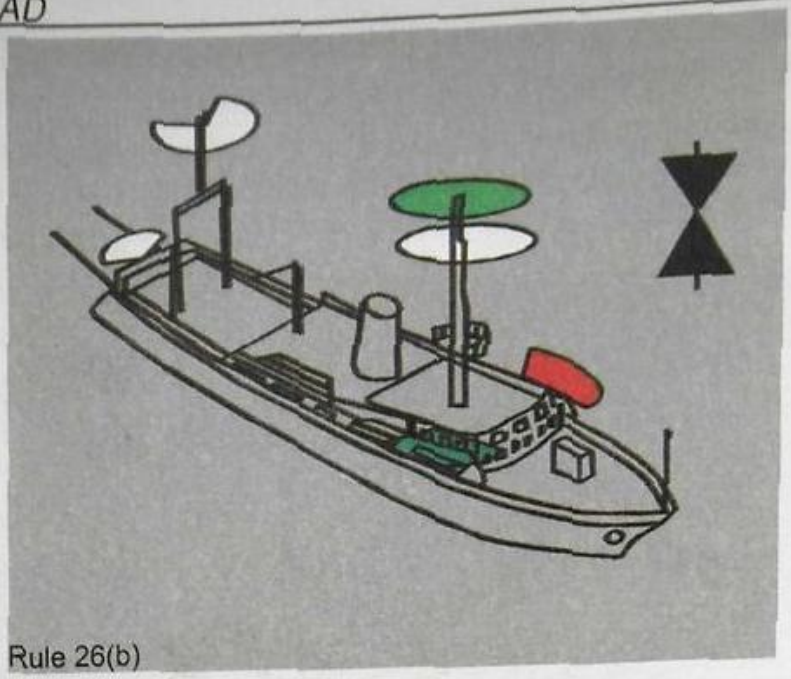
Rule 26(b)



Rule 26(b)



Scanned by CamScanner



Rule 26(b)

(c) A vessel engaged in fishing, other than trawling shall exhibit:

(i) two all-round lights in a vertical line, the upper being red and the lower white, or a shape consisting of two cones with apexes together in a vertical line one above the other;

A fishing vessel will exhibit two all round lights, the upper being red and lower being white. These are lights unique to a fishing vessel. Do not confuse these lights with white over red shown by a pilot vessel. The day shape is the same as for a vessel engaged in trawling, i.e. two cones apexes together.

(ii) when there is outlying gear extending more than 150 metres horizontally from the vessel, an all-round white light or a cone apex upwards in the direction of the gear;

To indicate there is obstruction on one side, the fishing vessel will exhibit a white light in the direction of the outlying gear if it extends more than 150 m horizontally and during the day she will exhibit a cone apex upwards in the direction of the gear.

These arrangements are made to indicate to other vessels to keep clear of the nets.

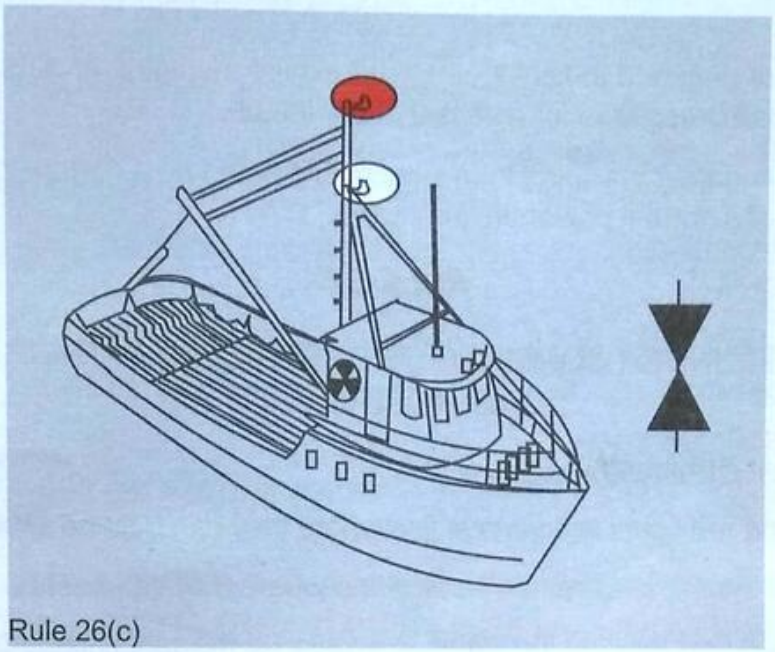
(iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

As we have seen earlier a fishing vessel will exhibit only the lights prescribed in this rule whether she is underway or at anchor. When she is making way through the water she will also exhibit side and stern lights.

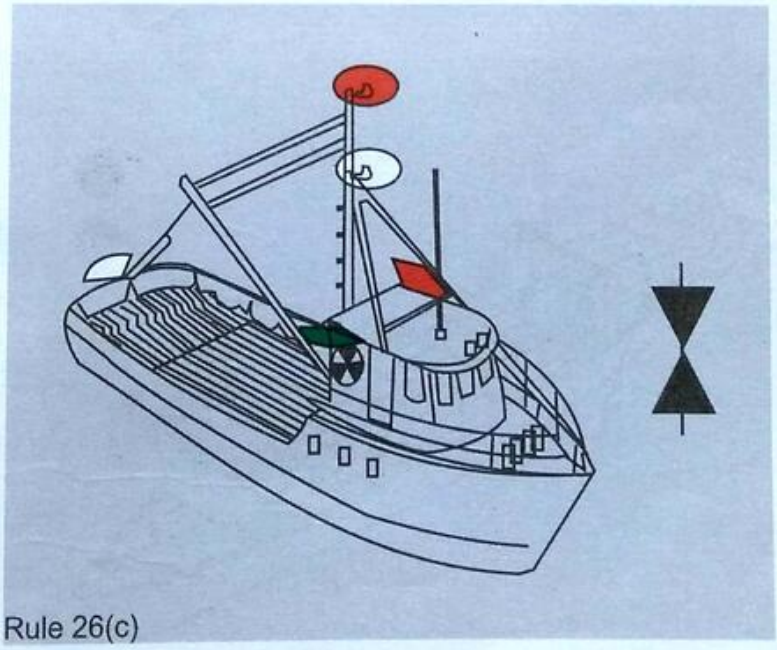


Scanned by CamScanner

(d) The additional signals described in Annex II to these Regulations apply to a vessel engaged in fishing in close proximity to other vessels engaged in fishing.



Rule 26(c)



Rule 26(c)



Scanned by CamScanner

Annex II to these rules describes lights to be exhibited by fishing vessels to indicate that they are shooting nets (two white lights displayed vertically one on top of the other), hauling nets (Two lights top being white and lower red) or nets are fast on an obstruction (Two red lights one on top of the other). Study the lights explained in Annex II carefully as they are asked frequently in the exams.

(e) A vessel when not engaged in fishing shall not exhibit the lights or shapes prescribed in this Rule, but only those prescribed for a vessel of her length.

If a vessel is not engaged in fishing then she is considered as a normal vessel and she should exhibit the lights of a normal power driven vessel.

## *RULE 27*

### VESSELS NOT UNDER COMMAND OR RESTRICTED IN THEIR ABILITY TO MANOEUVRE

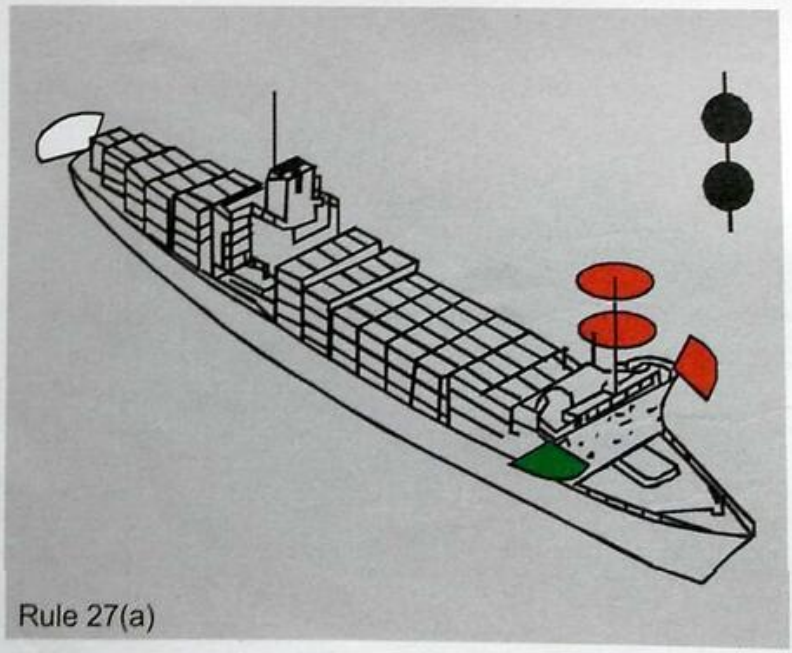
(a) A vessel not under command shall exhibit:

(i) two all-round red lights in a vertical line where they can best be seen;

(ii) two balls or similar shapes in a vertical line where they can best be seen;

(iii) when making way through the water, in addition to the lights prescribed in this paragraph, sidelights and a sternlight.

We have seen the meaning of vessel 'Not Under Command' in rule 3. Such a vessel will indicate her special condition by exhibiting two all round red lights one on top of the other.



Rule 27(a)



Scanned by CamScanner

When this vessel makes way through the water then she shows her side and stern lights.

This vessel does not exhibit her masthead lights. The reason for this is that a vessel aground has to display two red lights in a vertical line and anchor lights.

So when we see two red lights displayed vertically and two white lights one forward of the white lights and the other aft of the red lights, we know that the vessel is aground and it calls for some immediate action as own vessel could also run aground.

Since the vessel not under command will never display her masthead lights she cannot be mistaken for a vessel ground.

During the day, the vessel not under command will display two black balls one on top of the other to indicate her special condition.

If a vessel Not Under Command drops anchor due to her special condition, she is no more required to manoeuvre and hence she will not exhibit the signals for a vessel not under command but for a vessel at anchor.

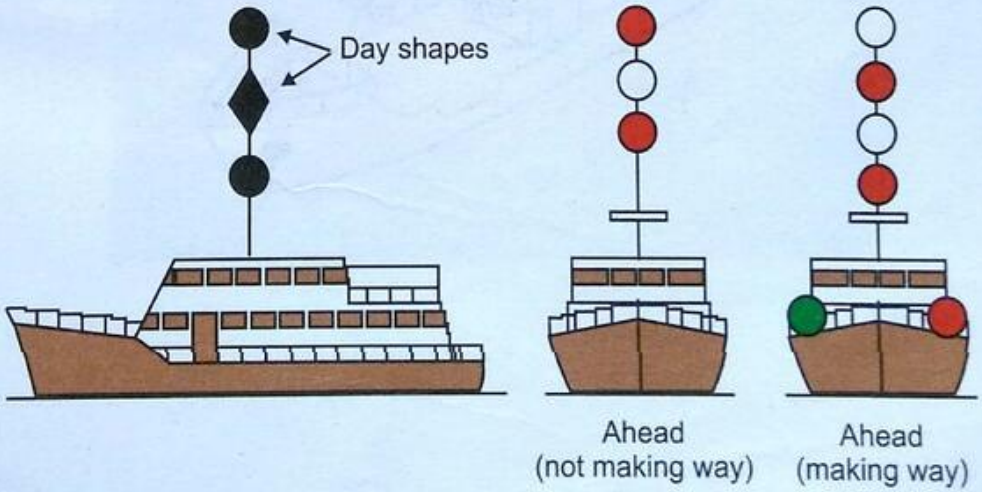
(b) A vessel restricted in her ability to manoeuvre, except a vessel engaged in mine clearance operations, shall exhibit:

(i) three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be white;

(ii) three shapes in a vertical line where they can best be seen. The highest and lowest of these shapes shall be balls and the middle one a diamond;

(iii) when making way through the water, a masthead light or lights, sidelights and a sternlight, in addition to the lights prescribed in sub-paragraph (i);

(iv) when at anchor, in addition to the lights or shapes prescribed in sub-paragraphs (i) and (ii), the light, lights or shape prescribed in Rule 30.






Scanned by CamScanner

In rule 3 we have read the definition of "a vessel restricted in her ability to manoeuvre".

Any vessel restricted in her ability to manoeuvre other than a vessel engaged in mine clearance operation (Mine clearance vessel is required to display special signals) will display three all round lights vertically, the upper and lower being red and the middle being white.

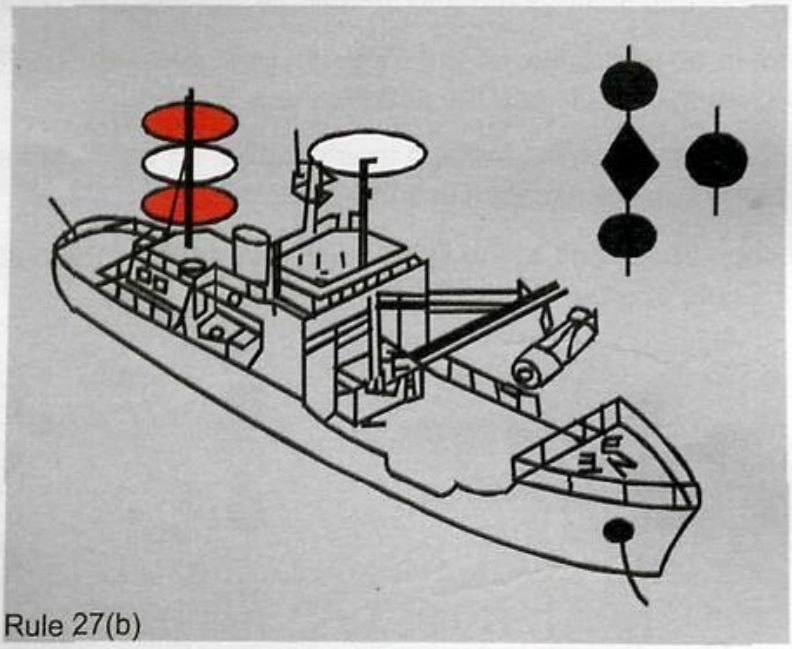
When making way through the water she will display side and stern lights and masthead lights for a vessel of her length.

When a vessel restricted in her ability to manoeuvre is carrying out her operations at anchor then she will display the lights and shapes for a vessel at anchor.

The vessel "restricted in her ability to manoeuvre" may display two red lights vertically on one side and lower than the three lights (Red, white, red) to indicate it is dangerous to pass on that side and two green lights on the othet side to indicate that it is safe on that side.

During the day she will display three shapes the upper and lower being balls and middle being a diamond.

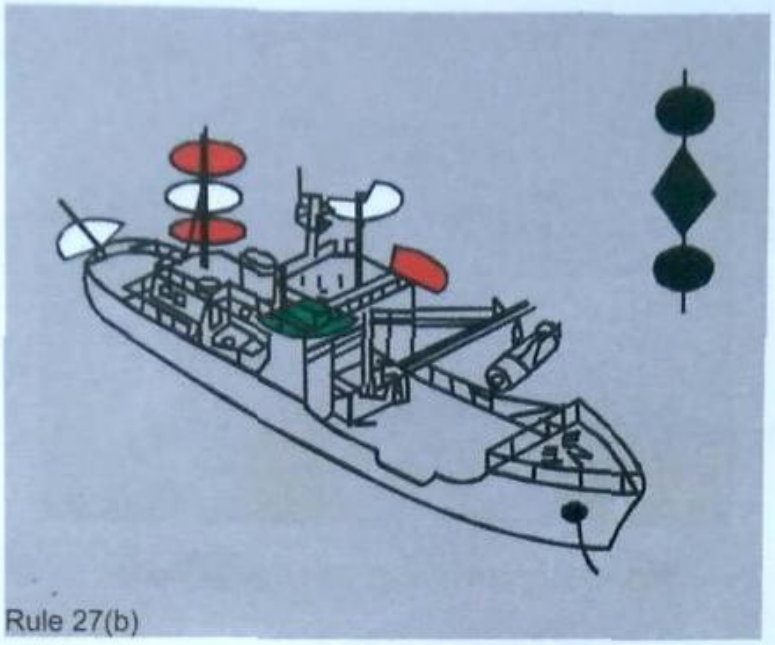
To indicate that it is safe to pass on one side, she will display two black balls on the side it is not safe to pass and two diamonds to indicate the side it is safe to pass.



Rule 27(b)



Scanned by CamScanner



Rule 27(b)

(c) A power driven vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course shall, in addition to the lights or shapes prescribed in Rule 24(a) exhibit the lights or shapes prescribed in sub-paragraphs (b)(i) and (ii) of this Rule.

If a power driven vessel is engaged in towing such that she is restricted in her ability to manoeuvre, then beside the lights and shapes of a vessel engaged in towing operation, she will display the lights and shapes for a vessel restricted in her ability to manoeuvre.

*The rule implies that every vessel engaged in towing operation is not restricted in her ability to* manoeuvre and hence only when she is restricted in her ability to manoeuvre she will display the lights and shapes as per this rule.



Scanned by CamScanner

**Vessels engaged in seismic surveys**

Seismic surveys are undertaken in various parts of the world in connection with exploration for oil and gas. It is seldom practicable to publish details of the areas of operation except in general terms, and vessels carrying out seismic surveys may therefore be encountered without warning.

**The method of carrying out such surveys is as follows:**

The seismic vessel may tow up to three detector cables, between 3 cables and 3 miles in length and, in the case of multiple streamers, upto 300 m in width between the outer streamers. The end is marked by a tail buoy fitted with a radar reflector. "Air" or "Gas" guns are usually towed close astern of the vessel. The explosions from these guns are invisible from other craft and completely harmless to fish. A second vessel may follow the first to keep the way clear of traffic.

Seismic vessels usually acquire their data by running parallel course over a rectangular grid. The grid size varies between 11 miles square for preliminary surveys to less than 5 cables where high definition is required. The turning circle through 180° for a seismic vessel towing three detector cables is over a mile and vessel speeds are in the range 3 to 6kn. Surveys vary in duration from a few days to several months.

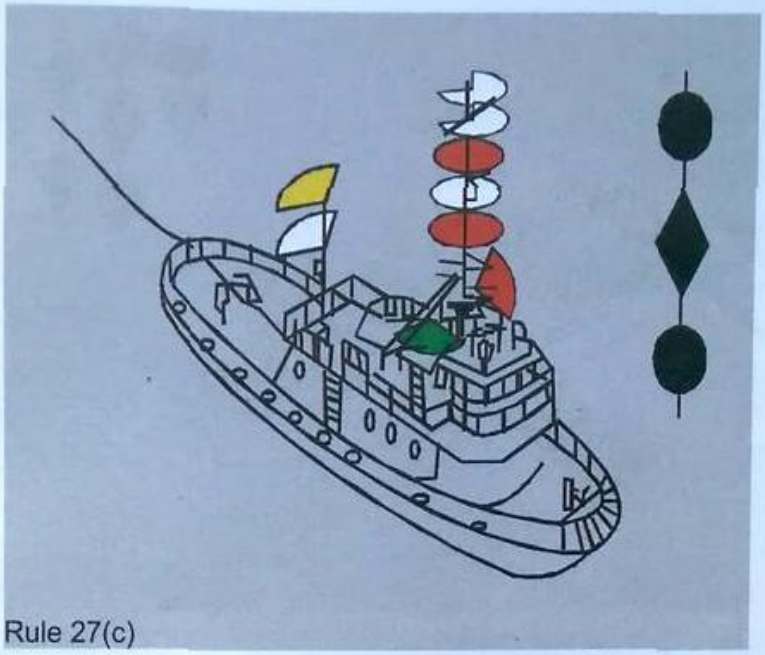
Seismic survey vessels are unable to move freely and generally display the signals prescribed in Rule 27(h). Other vessels should keep well clear in accordance with Rules 16 and 18, giving them a wide berth of at least 3 miles.

Seismic survey vessels may also show the appropriate signals from the International Code of Signals.

They often keep radio silence to avoid interference with their registering equipment. Vessels called by light by a seismic survey vessel should therefore answer her by the same means, and not by radio.



Scanned by CamScanner



Rule 27(c)

(d) A vessel engaged in dredging or underwater operations, when restricted in her ability to manoeuvre, shall exhibit the lights and shapes prescribed in sub-paragraphs (b)(i), (ii) and (iii) of this Rule and shall in addition, when an obstruction exists, exhibit :

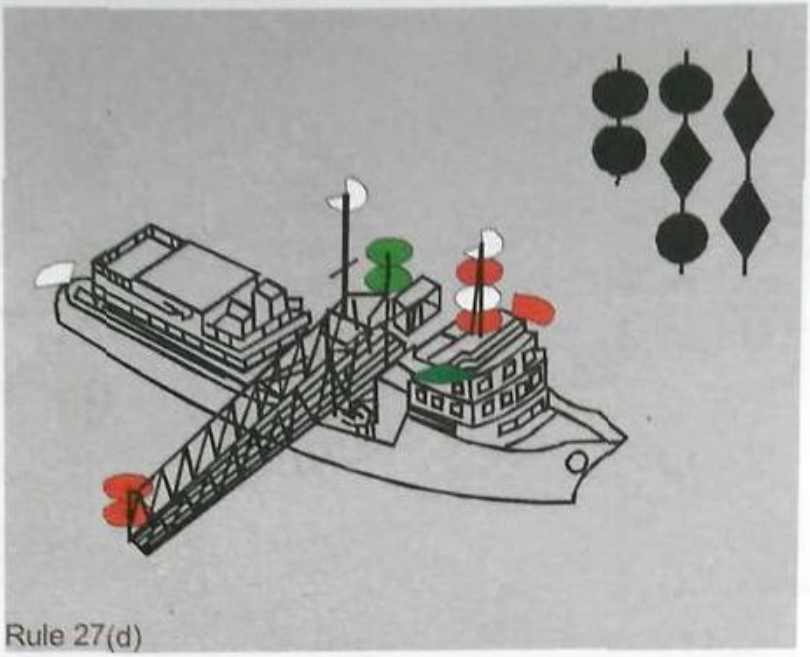
(i) two all-round red lights or two balls in a vertical line to indicate the side on which the obstruction exists;

(ii) two all-round green lights or two diamonds in a vertical line to indicate the side on which another vessel may pass;

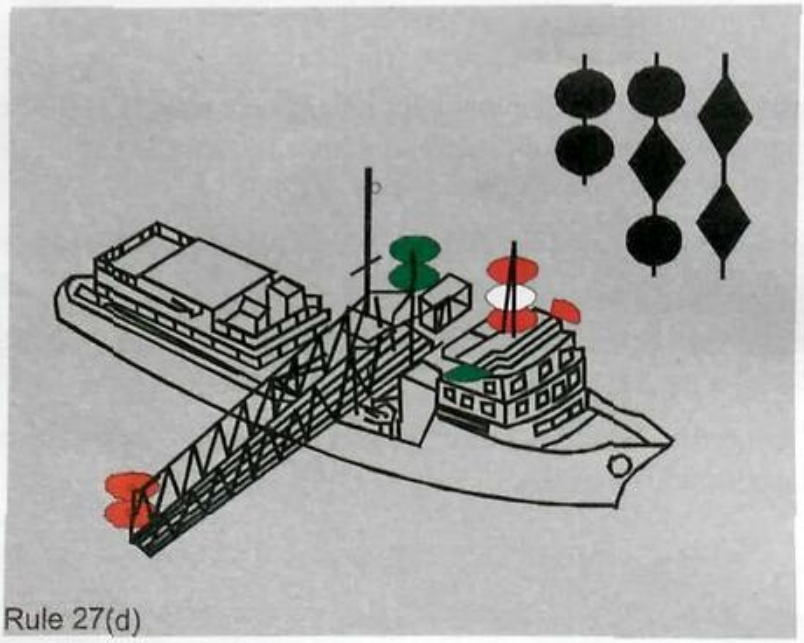
(iii) when at anchor, the lights or shapes prescribed in this paragraph instead of the lights or shape prescribed in Rule 30.



Scanned by CamScanner

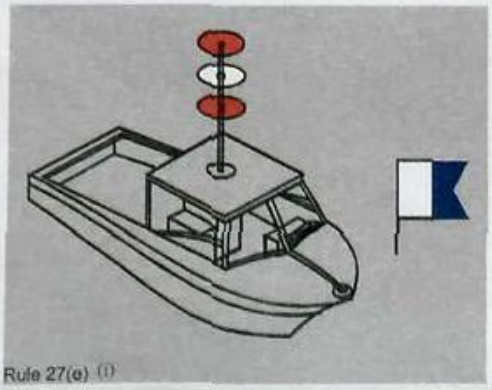


Rule 27(d)

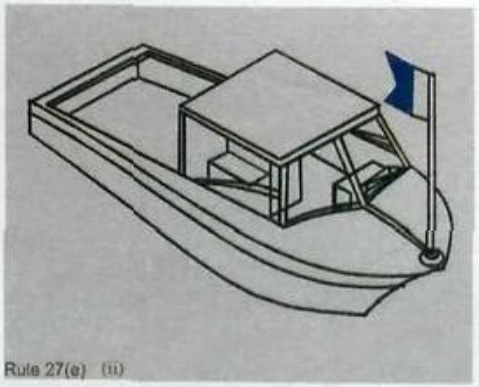


Rule 27(d)

A vessel engaged in dredging or other under water operation which may cause her to be restricted in her ability to manoeuvre, she will display the lights explained in the earlier para to indicate the side safe to pass on and side to be avoided.



Rule 27(e) (i)



Rule 27(e) (ii)



Scanned by CamScanner

When she is carrying out her operations at anchor, she will display the lights and shapes as per this rule rather than as per the requirements for a vessel at anchor.

(e) Whenever the size of vessel engaged in diving operations makes it impracticable to exhibit all lights and shapes prescribed in paragraph (d) of this Rule, the following shall be exhibited:

(i) three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be white;

(ii) a rigid replica of the international code flag "A" not less than 1 metre in height. Measures shall be taken to ensure its all-round visibility.

We have seen that the vessel engaged in diving operation may be small vessel and she may not be in a position to display all the lights and shapes as required by this rule.

She is then as a minimum required to display the lights for a vessel restricted in her ability to manoeuvre and during the day display a rigid shape resembling the flag for letter A. (The meaning of the letter A as per International Code of Signals is "I have a diver down. Keep well clear at slow speed"). The replica of flag A shall be such that it can bee seen from all all around.

(f) A vessel engaged in mine clearance operations shall, in addition to the lights prescribed for a power-driven vessel in Rule 23 or to the lights or shapes prescribed for a vessel at anchor in Rule 30 as appropriate, exhibit three all-round green lights or three balls. One of these lights or shapes shall be exhibited near the foremasthead and one at each end of the fore yard. These lights or shapes indicate that it is dangerous for another vessel to approach within 1000 metres of the mine clearance vessel.

A vessel engaged in mine clearance operations, shall display a special signal of three green lights as explained in the rule. Mine clearance operations are carried out in area where mines are expected Merchant vessels are not expected to be in the area at all. If she does find a mine clearance vessel on her route she shall alter course and move out of the area. If at all you find yourself in such a situation it is understood you will take all necessary precautions and navigate cautiously. It is probably safe to follow the mine clearance vessel as she would have cleared mines in the area where she has passed but the rule requires that we do not approach closer than 1000 m.

(g) Vessels of less than 12 metres in length, except those engaged in diving operations, shall not be required to exhibit the lights & shapes prescribed in this Rule.

A vessel less then 12 m because of her size is exempted from complying with this rule.

(h) The signals prescribed in this Rule are not signals of vessels in distress and requiring assistance. Such signals are contained in Annexe IV to these Regulations.

The signals prescribed here are not distress signals and should not be confused with the distress signals which are given in Annex IV to these regulations.

You should read the distress signals given in these rules as they are important from the point of view of exams.

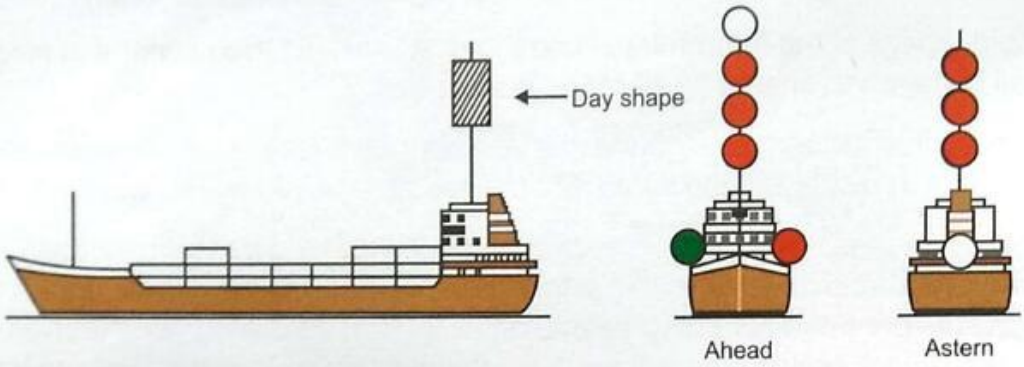


Scanned by CamScanner

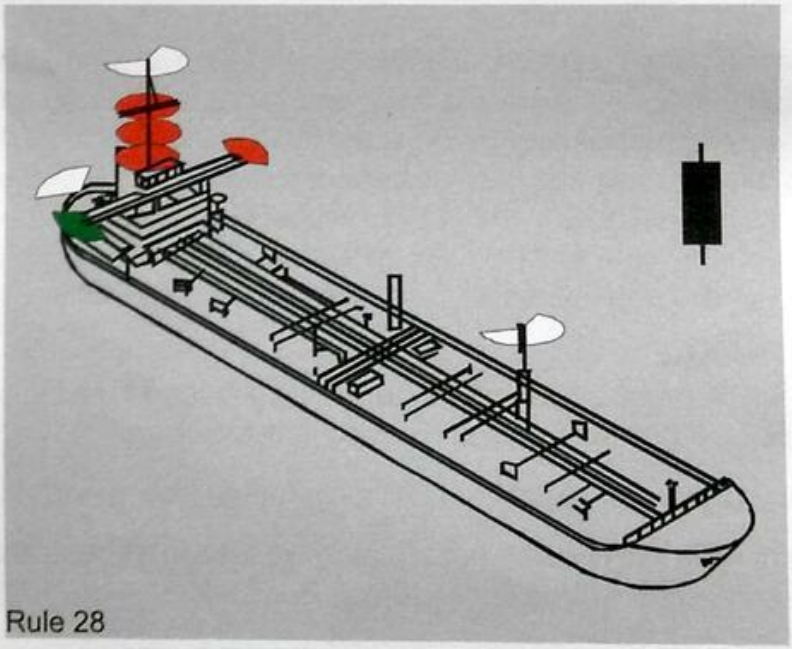
## RULE 28

### VESSELS CONSTRAINED BY THEIR DRAUGHT

A vessel constrained by her draught may, in addition to the lights prescribed for power-driven vessels in Rule 23, exhibit where they can best be seen three all-round red lights in a vertical line, or a cylinder.




We have seen the definition of a vessel constrained by her draft in rule 3. A power driven vessel which is constrained by her draft shall show special lights to show her condition. These lights consist of three red lights displayed vertically with the lights of a normal power driven vessel. During the day time this vessel shall display a black cylinder. The dimensions of the shapes are given in annexes to these rules.



Rule 28



Scanned by CamScanner

## RULE 29

PILOT VESSELS

(a) A vessel engaged on pilotage duty shall exhibit:

A power driven vessel may be engaged on a duty to take pilots to and from vessels. When a vessel is engaged on pilotage duty, she will exhibit the lights as per this rule to identify herself.

(i) at or near the masthead, two all-round lights in a vertical line, the upper being white and the lower red;

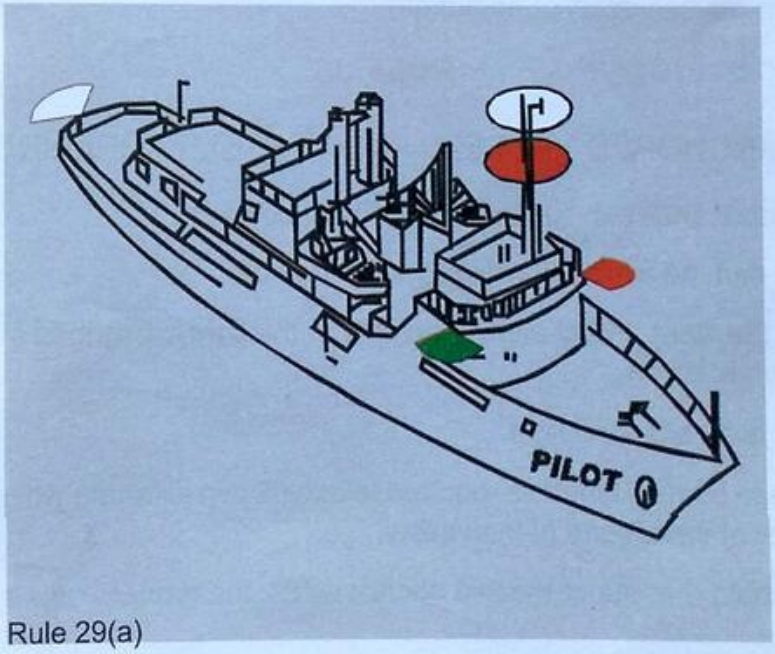
She has to carry two all round lights displayed vertically, upper being white and lower being red. We have refered to these lights in the rule regarding fishing vessel as these lights are opposite to the lights displayed by a vessel engaged in fishing.

(ii) when underway, in addition, sidelights and a sternlight;

When a pilot vessel is underway she will show like all other vessels side and stern lights.

(iii) when at anchor, in addition to the lights prescribed in sub-paragraph (i), the light, lights or shape prescribed in Rule 30 for vessels at anchor.

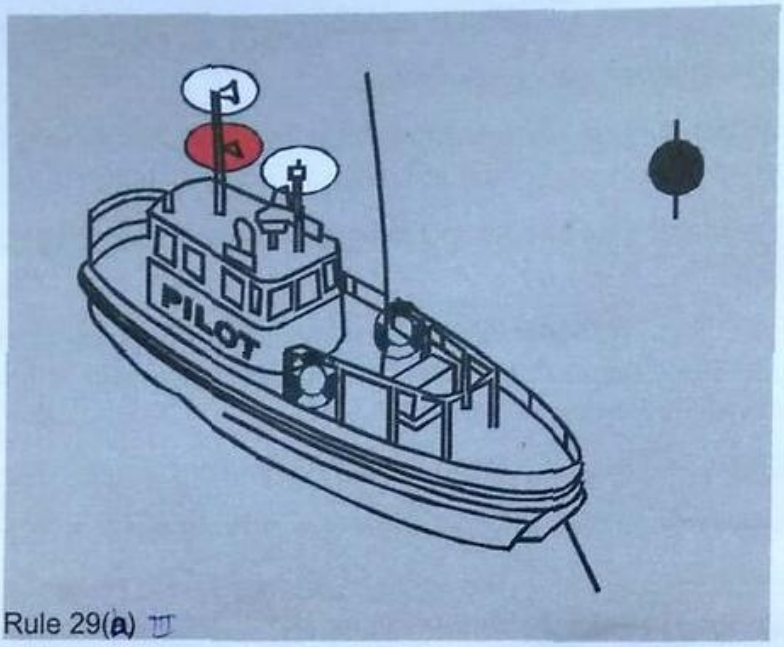
A pilot vessel at anchor will display the special lights of a pilot vessel to distinguish herself from the other vessels. She will also display the normal anchor lights for a vessel of her length.




Rule 29(a)



Scanned by CamScanner




Rule 29(a)

(b) A pilot vessel when not engaged on pilotage duty shall exhibit the lights or shapes prescribed for a similar vessel of her length.

Like for many other vessels, a pilot vessel when she is not on pilotage duty, she will display the lights for a power driven vessel of her length.

## *RULE 30*

### ANCHORED VESSELS AND VESSELS AGROUND

(a) A vessel at anchor shall exhibit where it can best be seen:

(i) in the fore part, an all-round white light or one ball;

(ii) at or near the stern and at a lower level than the light prescribed in sub-paragraph (i), an all-round white light.

The anchor light is an all round light.

A vessel more than 50 m in length is required to exhibit two all round white lights, one in the fore part and the other at the aft end of the vessel.

It is important to note that out of the two anchor lights, the forward one is at a higher level than the aft light.

We know that out of the two masthead lights, the forward masthead light is lower but in case of the anchor lights, the forward anchor light is at a higher level.

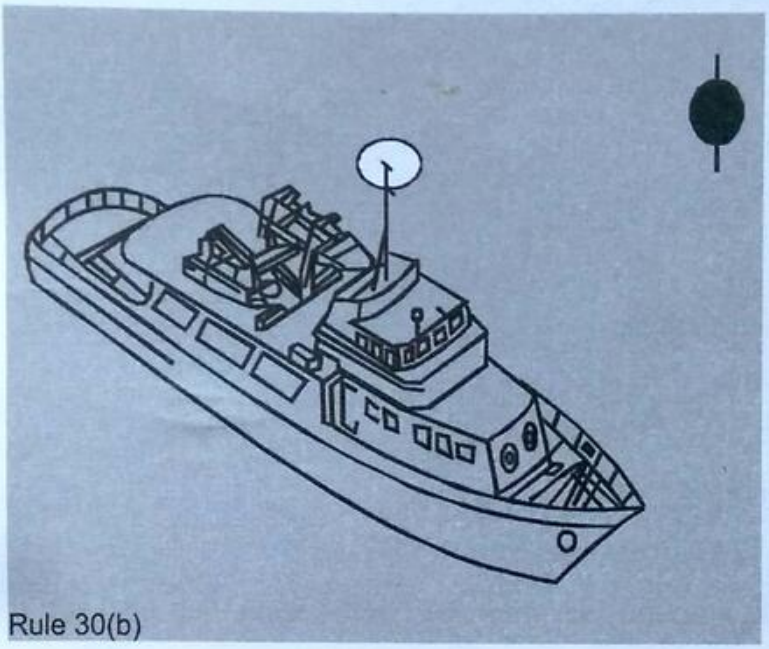


Scanned by CamScanner

During the day, a vessel at anchor, irrespective of its length, is required to exhibit only one black ball at the forward end of the vessel.

(b) A vessel of less than 50 metres in length may exhibit an all- round white light where it can best be seen instead of the lights prescribed in paragraph (a) of this Rule.

A vessel less than 50 m in length and at anchor, is required to exhibit one all round white light at her forward end.



Rule 30(b)

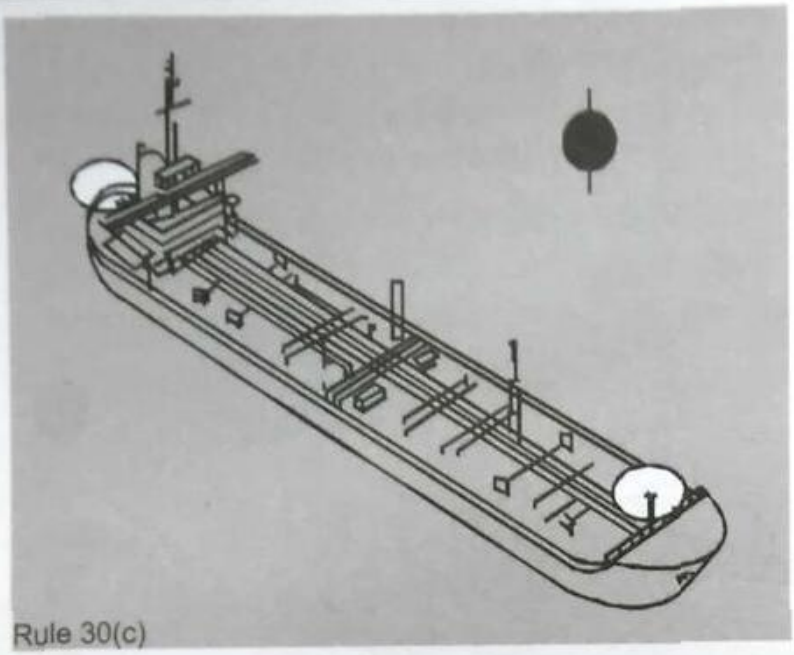
(c) A vessel at anchor may, and a vessel of 100 metres and more in length, shall also use the available working or equivalent lights to illuminate her decks.

Since the anchor light is an all round white light with a range of 3 nm, it may not be seen by another vessel approaching the vessel at anchor. Also since vessels normally anchor close to the shore, the glare of the shore lights may obscure the anchor light.

Hence to ensure that the vessel at anchor is seen by another vessel this rule requires that all vessels of more than 100 m in length at anchor shall switch on her deck lights to illuminate the deck. Though the rule does not require a vessel of less than 100 m to illuminate her deck it is advisable to do so.



Scanned by CamScanner



Rule 30(c)

(d) A vessel aground shall exhibit the lights prescribed in paragraph (a) or (b) of this Rule and in addition, where they can best be seen:

(i) two all-round red lights in a vertical line;

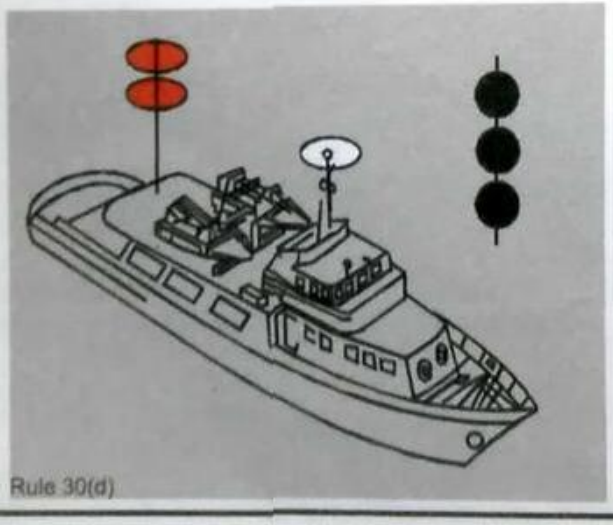
(ii) three balls in a vertical line.

A vessel which is aground, will show the anchor lights and also two red all round lights in a vertical line.

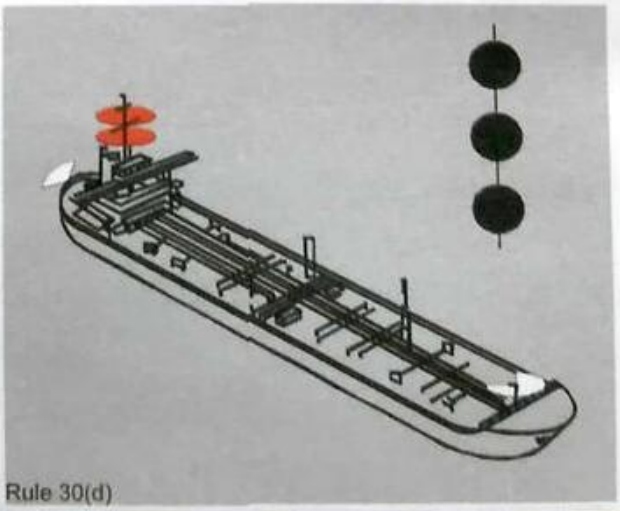
Hence we have to remember that if we see a vessel exhibiting the anchor lights and two red lights in a vertical line, we have to take immediate action for the safety of the vessel as we may be heading towards a shallow patch.

During the day the vessel aground will exhibit besides the anchor ball, three black balls in a vertical line.

Remember that the two red lights of a vessel aground are replaced by three black balls during the day.



Rule 30(d)



Rule 30(d)



Scanned by CamScanner

(e) A vessel of less than 7 metres in length, when at anchor, not in or near a narrow channel, fairway or anchorage, or where other vessels normally navigate, shall not be required to exhibit the lights or shape prescribed in paragraphs (a) and (b) of this Rule.

A small vessel of less than 7 m when at anchor is not required to exhibit the lights and shapes for a vessel at anchor provided she is not close to an area where ships normally navigate. This requirement is to avoid confusing another vessel.

(f) A vessel of less than 12 metres in length, when aground, shall not be required to exhibit the lights or shapes prescribed in sub-paragraphs (d)(i) and (ii) of this Rule.

A vessel of less than 12 m in length, if aground, will be in very shallow waters and a normal power driven vessels will not be venturing into such waters. Hence she is not required to show the lights or shapes for a vessel aground

## *RULE 31*

## SEAPLANES

Where it is impracticable for a seaplane or a WIG craft to exhibit lights and shapes of the characteristics or in the positions prescribed in the Rules of this Part she shall exhibit lights and shapes as closely similar in characteristics and position as is possible.

Since a WIG craft is of special construction and is not meant to navigate in the water, the rules are not very stringent about the location of the lights. The rules require that she should exhibit the lights required by these rules in a position as close to the required position as possible.



Scanned by CamScanner

# NOTES



Scanned by CamScanner

Overtaking
Stand-on (Privileged) Vessel Being Overtaken
Inland Rules
"I want to pass you on your port side." 2 short blasts (1 sec.)
Inland Rules
"I want to pass you on your starboard side." 1 short blast (1 sec.)
Give-way (Burdened) Vessel Overtaking

# Overtaking

If the approaching vessel is within the sternlight sector of another vessel but their courses will bring them no closer together then there is no risk of collision and no overtaking situation exists. Overtaking continues even as the overtaking vessel moves out of the sternlight sector and pulls abeam of and then ahead of the overtaken vessel. It ends only when the manoeuver has been completed. Overtaking on the water is pretty much like overtaking on land: the driver of the faster car is looking forward at the car to be passed and hence is in a better position to plan and execute the maneuver. From the bridge of most larger vessels, the view to the rear is substantially more limited than the view to the front. Should there not be room to pass, the overtaking vessel always has the option of slowing down; the vessel to be overtaken will often be unable to go any faster. Rule 13 therefore requires the overtaking vessel to keep out of the way of the vessel being passed.

Scanned by CamScanner

# PART D - SOUND AND LIGHT SIGNALS

The rules in this Part are meant to define the sound and light signals that a vessel has to make to communicate information about her status to other vessels.

## *RULE 32*

### DEFINITIONS

(a) The word "whistle" means any sound signalling appliance capable of producing the prescribed blasts and which complies with the specifications in Annex III to these Regulations.

The rules prescribe sound signals to indicate to other vessels the presence of own vessel, also to indicate our intension and also to ask for her intension.

The sound signals were made with the aim of ensuring that without talking to one another, ships will be able to convey to one another some simple but important information.

A whistle is a sound making device which is capable of making the signals as required by these rules.

(b) The term "short blast" means a blast of about one second's duration.

The sound signals are based on the morse signalling system consisting of short and long blasts. A short blast is of 1 second duration.

(c) The term "prolonged blast" means a blast of from four to six seconds' duration.

A prolonged blast is a blast of four to six seconds duration. (Thus to signal that a vessel is underway and making way through the water, in restricted visibility, a vessel is required to sound a prolonged blast every 2 minutes.)

## *RULE 33*

### EQUIPMENT FOR SOUND SIGNALS

(a) A vessel of 12 metres or more in length shall be provided with a whistle, a vessel of 20 metres or more in length shall be provided with a bell in addition to a whistle, and a vessel of 100 metres or more in length shall, in addition, be provided with a gong, the tone and sound of which cannot be confused with that of the bell. The whistle, bell and gong shall comply with the specification in Annex III to these regulations. The bell or gong or both may be replaced by other equipment having the same respective sound characteristics, provided that manual sounding of the required signals shall always be possible.

This rule prescribes the sound signalling equipment to be carried by vessels.The signalling appliances are such that their sound cannot be mistaken for some other sound.

The rule allows automatic means of making the sound signal but manual operation should be possible.



Scanned by CamScanner

On some ships the sound of the bell forward and gong aft, can be made mechanically. This allows the vessel to make the sound signals from the bridge itself.

(b) A vessel of less than 12 metres in length shall not be obliged to carry the sound signalling appliances prescribed in paragraph (a) of this Rule but if she does not, she shall be provided with some other means of making an efficient sound signal.

A small vessel of less than 12 m is not required to have the sound signalling equipment as per this rule but she is required to have some equipment which will make a sound signal to attract attention.

Many ships have an equipment on board which can be used to make the sound signals manually. This equipment requires the user to crank a handle and store air in a chamber and then there is a knob which can be manually activated to make the required sound signal.

## *RULE 34*

## MANOEUVRING AND WARNING SIGNALS

(a) When vessels are in sight of one another, a power-driven vessel underway, when manoeuvring as authorised or required by these Rules, shall indicate that manoeuvre by the following signals on her whistle:

- one short blast to mean "I am altering my course to starboard"
- two short blasts to mean "I am altering my course to port"
- three short blasts to mean "I am operating astern propulsion."

The signals prescribed in this rule are to be used by vessels when in sight of one another only.

Normally these signals are used in areas where ships manoeuvre in close proximity of one another.

These signals when sounded give a quick indication to the other vessel about the intention of the vessel manoeuvring near it.

In the open sea it would not make sense to sound these signals while manoeuvring as the signal would not be heard by the other vessel due to the distance between the two.

The signals are to indicate to the other vessel when a ships decides to alter course to port, starboard or to operate the engines astern to stop herself.

(b) Any vessel may supplement the whistle signals prescribed in paragraph (a) of this Rule by light signals, repeated as appropriate, whilst the manoeuvre is being carried out:

(i) these light signals shall have the following significance:

- one flash to mean "I am altering my course to starboard";
- two flashes to mean "I am altering my course to port";
- three flashes to mean "I am operating astern propulsion";

Normally on all ships when the whistle is sounded, the sound is supplemented by signalling light automatically.



Scanned by CamScanner

Thus when we sound a short blast on the whistle, there will be a short flash on the signalling light.

Thus when the sound signal is used at night, besides knowing the intention of the other vessel, the flash indicates which vessel is sounding the signal and her intention.

(ii) the duration of each flash shall be about one second, the interval between flashes shall be about one second, and the interval between successive signals shall be not less that ten seconds;

As we have seen earlier, a short blast on the whistle is of 1 second duration, a flash is of one second duration.

So to avoid confusion, if a vessel is making more than one signal at a time, the rule prescribes the duration between two signals to be not less than 10 seconds.

(iii) the light used for this signal shall, if fitted, be an all-round white light, visible at a minimum range of 5 miles, and shall comply with the provisions of Annex I to these regulations.

(c) When in sight of one another in a narrow channel or fairway:

(i) a vessel intending to overtake another shall in compliance with Rule 9(e)(i) indicate her intention by the following signals on her whistle:

- two prolonged blasts followed by one short blast to mean "I intend to overtake you on your starboard side";
- two prolonged blasts followed by two short blasts to mean "I intend to overtake you on your port side".

In rule 9 we have seen that in narrow channels or fairways, the vessel being overtaken may have to take action to permit safe passing.

The overtaking vessel will have to convey her intention to the other vessel by using the sound signal prescribed in this rule.

The signals are easy to remember.

The two prolonged blasts indicate that the vessel intends to overtake another and the single short blast indicates that the overtaking will be done from her starboard side. Similarly in the second case two short blasts indicate the overtaking will be done from the port side.

(ii) the vessel about to be overtaken when acting in accordance with Rule 9(e)(i) shall indicate her agreement by the following signal on her whistle:

- one prolonged, one short, one prolonged and one short blast, in that order.

This signal is to indicate to the overtaking vessel that the vessel being overtaken is in agreement.

This signal is the morse for 'C' which means 'Yes' or affirmative.

This signal will indicate to the overtaking vessel that the vessel to be overtaken has agreed to the manoeuvre.



Scanned by CamScanner

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

This signal has to be used only when vessels are in sight of one another.

It is used to indicate to the other vessel that the vessel sounding the signal has not understood the intention of the other vessel and hence is unsure of the action that that other vessel will take.

This signal will also indicate that the vessel sounding the signal is not sure if sufficient action is being taken to avoid a collision.

The sound signal can be supplemented by a light signal too.

Remember that the signal consisting of five short and rapid blasts / flashes means 'What are your intentions?'

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. Such signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

This signal is for giving a warning to other vessels which may be approaching an area where the ships are obscured by an obstruction.

We know that radar cannot detect a target which is on the other side of an obstruction. Hence instead of having a situation where two ships appear head on in a channel or fairway due to the fact that they are unaware of each others presence, the vessels should sound one prolonged blast to indicate their presence to other vessels.

A vessel hearing a prolonged blast in a narrow channel or fairway and close to a bend, will also sound a prolonged blast.

(f) If whistles are fitted on a vessel at a distance apart of more than 100 metres, one whistle only shall be used for giving manoeuvring and warning signals.

On bigger vessel where there are two whistles fitted, one forward and the other aft, the rule requires that only one should be used to give the signals required by these rules.

This requirement is to prevent the signals being made by the two whistles interfering with one another and also to prevent them from being misunderstood as signals from two ships.



Scanned by CamScanner

## RULE 35

### SOUND SIGNALS IN RESTRICTED VISIBILITY

In or near an area of restricted visibility, whether by day or night, the signals prescribed in this Rule shall be used as follows:

The sound signals prescribed in this rule should be sounded only when near or in an area of restricted visibility.

The sound signals given in rule 34 were for ships in sight of one another.

(a) A power-driven vessel making way through the water shall sound at intervals of not more than 2 minutes one prolonged blast.

We should understand this rule thoroughly. A power driven vessel when making way through the water, shall sound one prolonged blast at intervals of not more than 2 minutes. A vessel can sound this prolonged blast at intervals of less than 2 minutes also. A vessel would do that if she would like her sound signal to be distinguished from the signal sounded by other vessels in the vicinity.

(b) A power-driven vessel underway but stopped and making no way through the water shall sound at intervals of not more than 2 minutes two prolonged blasts in succession with an interval of about 2 seconds between them.

If power driven vessel is underway but stopped then she will sound two prolonged blasts at intervals of not more than 2 minutes. This signal is very useful in restricted visibility because in a situation where there is doubt about the situation that is developing, a vessel making way through the water may stop her engines to allow her more time to assess the situation.

Immediately after stopping her engines a vessel should not sound the two prolonged blasts as she will still be making way through the water. Only when her speed through the water has reduced to negligible can she sound this signal.

NUC RAM CBD

(c) A vessel not under command, a vessel restricted in her ability to manoeuvre, a vessel constrained by her draught, a sailing vessel, a vessel engaged in fishing and a vessel engaged in towing or pushing another vessel shall, instead of the signals prescribed in paragraphs (a) or (b) of this Rule, sound at intervals of not more than 2 minutes three blasts in succession, namely one prolonged followed by two short blasts.

All other power driven vessels have one sound signal which is one prolonged blast followed by two short blast.

Thus there are only three main fog signals to remember.

One prolonged blast at intervals of not more than 2 minutes for power driven vessels making way through the water.

Two prolonged blasts at intervals of not more than 2 minutes for power driven vessels underway but not making way through the water.

One prolonged blast followed by two short blasts at intervals of not more than 2 minutes for the vessels mentioned in this rule.



Scanned by CamScanner

(d) A vessel engaged in fishing, when at anchor, and a vessel restricted in her ability to manoeuvre when carrying out her work at anchor, shall instead of the signals prescribed in paragraph (g) of this Rule sound the signal prescribed in paragraph (c) of this Rule.

We have seen in the rule concerning fishing vessels that fishing vessels even at anchor show the lights prescribed for fishing vessels and not the anchor lights.

(e) A vessel towed or if more than one vessel is towed the last vessel of the tow, if manned, shall at intervals of not more than 2 minutes sound four blasts in succession, namely one prolonged followed by three short blasts. When practicable, this signal shall be made immediately after the signal made by the towing vessel.

Since the length of the tow could be quite long, the vessel being towed or the last vessel of the tow shall sound a signal consisting of four blasts namely three short and one prolonged blast at intervals of not more than 2 minutes.This signal is required to be made if the towed vessel is manned.

This signal shall be made immediately after the signal made by the towing vessel to indicate the presence towing vessel and the tow.

(f) When a pushing vessel and a vessel being pushed ahead are rigidly connected in a composite unit they shall be regarded as a power-driven vessel and shall give the signals prescribed in paragraphs (a) or (b) of this Rule.

In a many places in the world, the stern of the tow is custom made so that the bow of the towing vessel can be connected to the tow such that they become one rigid unit. In such a case they are considered as one unit and they shall sound the fog signal of a power driven vessel making way through water or underway and not making way through the water.

(g) A vessel at anchor shall at intervals of not more than one minute ring the bell rapidly for about 5 seconds. In a vessel of 100 metres or more in length the bell shall be sounded in the forepart of the vessel and immediately after the ringing of the bell the gong shall be sounded rapidly for about 5 seconds in the after part of the vessel. A vessel at anchor may in addition sound three blasts in succession, namely one short, one prolonged and one short blast, to give warning of her position and of the possibility of collision to an approaching vessel.

A vessel at anchor has to sound one fog signal as a rule and the other signal is optional.

The mandatory signal is the ringing of the bell in the fore part for 5 seconds at intervals of every 1 minute.

If the vessel is more than 100 m in length then the bell is sounded in the fore part followed by the sounding of the gong for 5 seconds in the after part.The optional signal is three blasts, consisting of one short, one prolonged and one short blast. This signal is not sounded at all times but only is sounded when another vessel starts approaching the vessel at anchor, dangerously close.

(h) A vessel aground shall give the bell signal and if required the gong signal prescribed in paragraph (g) of this Rule and shall, in addition, give three separate and distinct strokes on the bell immediately before and after the rapid ringing of the bell. A vessel aground may in addition sound an appropriate whistle signal.



Scanned by CamScanner

A vessel aground shall sound the signal consisting of three strokes on the bell and then the rapid ringing of the bell for 5 seconds and then three distinct strokes on the bell. The same signal is repeated in the aft with a gong if the vessel is more than 100 m in length.

The three distinct strokes are to indicate that the vessel is aground.

A vessel which is aground may sound some other signal to warn the other vessel of her condition.

She may sound the morse for 'U' (Two short blasts followed by one prolonged blast) which means you are running into danger.

(i) A vessel of 12 metres or more but less than 20 metres in length shall not be obliged to give the bell signals prescribed in paragraphs (g) and (h) of this Rule. However, if she does not, she shall make some other efficient sound signal at intervals of not more than 2 minutes.

A vessel more than 12 m in length but less than 20 m in length is required to make some sound signal at intervals of not more than 2 minutes if she cannot make the signal as required by a vessel at anchor.

(j) A vessel of less than 12 metres in length shall not be obliged to give the above-mentioned signals but, if she does not, shall make some other efficient sound signal at intervals of not more than 2 minutes.

A small vessel, i..e a vessel less than 12 m in length , since it would not be possible to carry the sound signalling equipment on the vessel, is not required to make these sound signals, but she must be able to make some signal to attract attention.

(k) A pilot vessel when engaged on pilotage duty may in addition to the signals prescribed in paragraphs (a), (b) or (g) of this Rule sound an identity signal consisting of four short blasts.

A pilot vessel may, in restricted visibility, to identify herself to other vessels, sound a special signal which will indicate to other vessels that she is the pilot vessel. This signal consists of the morse letter 'H' (Four short blasts), which means 'I have a pilot on board'.

## *RULE 36*

## SIGNALS TO ATTRACT ATTENTION

If necessary to attract the attention of another vessel any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules, or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel. Any light to attract the attention of another vessel shall be such that it cannot be mistaken for any aid to navigation. For the purpose of this Rule the use of high intensity intermittent or revolving lights, such as strobe lights, shall be avoided.

This rule encourages us to use 'good seamanship practice'.

In case of imminant or immediate danger, we are allowed to use any signal to attract attention. This signal should not be similar to any of the other signals prescribed in this rule so as to cause confusion ot misunderstanding.



Scanned by CamScanner

To attract attention a vessel is allowed to direct her searchlight towards to the danger. This is particularly done by fishing vessels by directing their search light towards the fishing gear. A towing vessel may direct the searchlight towards the towing line.

The searchlight should not be directed towards the bridge of another vessel whereby the eyes of the watchkeeper will be dazzled making it difficult for the watchkeeper to keep a lookout..

The use of high intensity lights such as revolving strobe lights is to be avoided.

## *RULE 37*

## DISTRESS SIGNALS

When a vessel is in distress and requires assistance she shall use or exhibit the signals described in Annex IV to these Regulations.

In annex IV signals which can be used by vessels to indicate that they are distress have been listed. We should know these signals so that we do not use these signals or signal which may be misunderstood to be distress signals. Knowing these signals will be useful in recognizing them when seen and we can use them if own vessel is in distress.



Scanned by CamScanner

# Head-on Situation

Rule 14 is easy to follow. Each power-driven vessel approaching another head-on is required to alter her course to starboard for a port-to-port passing--you must turn right, never left. Two vessels are approaching each other rapidly head-on, and there is no way to distinguish one from the other for the purpose of assigning right-of-way. To ensure quick and predictable action. Rule 14 applies only to power-driven vessels meeting head-on with other power-driven vessels. It does not apply if one of the power-driven vessels is not an "ordinary" power-driven vessel but rather is one that is made a stand-on vessel with respect to an ordinary power-driven vessel by Rule 18(a). These other special vessels include vessels not under command, restricted in ability to maneuver, or engaged in fishing that are not required to take action (initially) when meeting an ordinary power-driven vessel head-on. Two sailing vessels meeting head-on are governed by Rule 12.

**Deciding whether you are in a head-on situation should not depend on the course made good, so do not delay your action until the path of the other vessel has been plotted.**

Scanned by CamScanner

# PART E – EXEMPTION

## *RULE 38*

### EXEMPTIONS

Any vessel (or class of vessels) provided that she complies with the requirements of the International Regulations for Preventing Collisions at Sea, 1960, the keel of which is laid or which is at a corresponding stage of construction before the entry into force of these Regulations may be exempted from compliance therewith as follows :

(a) The installation of lights with ranges prescribed in Rule 22, until four years after the date of entry into force of these Regulations.

(b) The installation of lights with colour specifications as prescribed in Section 7 of Annex I to these Regulations, until four years after the date of entry into force of these Regulations.

(c) The repositioning of lights as a result of conversion from Imperial to metric units and rounding off measurement figures, permanent exemption.

(d) (i) *The repositioning of masthead lights on vessels of* less than 150 metres in length, resulting from the prescriptions of Section 3(a) of Annex I to these Regulations, permanent exemption.

(ii) The repositioning of masthead lights on vessels of 150 metres or more in length, resulting from the prescriptions of Section 3(a) of Annex I to these Regulations, until nine years after the date of entry into force of these Regulations.

(e) The repositioning of masthead lights resulting from the prescriptions of Section 2(b) of Annex I to these Regulations until nine years after the date of entry into force of these Regulations.

(f) The repositioning of sidelights *resulting from the prescriptions of Section 2(g) and 3(b) of Annex* I to these regulations until nine years after the date of entry into force of these Regulations.

(g) The requirements for sound signal appliances prescribed in Annex III to these regulations, until nine years after the date of entry into force of these Regulations.

(h) The repositioning of all-round lights resulting from the prescription of Section 9(b) of Annex I to these regulations, permanent exemption.

This rule was made to allow existing vessels, which are already in service to allow time to comply with these rules. It has been many years since these rules came into force and now all vessels comply with these rules and hence this rule is redundant.



Scanned by CamScanner

# PART F - Verification of compliance with the provisions of the Convention

## RULE 39

### *DEFINITIONS*

(a) *Audit* means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

(b) *Audit Scheme* means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization*.

(c) *Code for Implementation* means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

(d) *Audit Standard* means the Code for Implementation.

## RULE 40

### *APPLICATION*

Contracting Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in the present Convention.

## RULE 41

### *VERIFICATION OF COMPLIANCE*

(a) Every Contracting Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of the present Convention.

(b) The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization*.

(c) Every Contracting Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization*.

* Refer to the Framework and Procedures for the IMO Member State Audit Scheme, adopted by the Organization by resolution A.1067(28)."



Scanned by CamScanner

(d) Audit of all Contracting Parties shall be:

(i) based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization*; and

(ii) conducted at periodic intervals, taking into account the guidelines developed by the Organization*.

* Refer to the Framework and Procedures for the IMO Member State Audit Scheme, adopted by the Organization by resolution A.1067(28)."



Scanned by CamScanner

# ANNEX I

## POSITIONING AND TECHINCAL DETAILS OF LIGHTS AND SHAPES

### 1. DEFINITION

The term "height above the hull" means height above the uppermost continuous desk. This height shall be measured from the position vertically beneath the location of the light.

### 2. VERTICAL POSITIONING AND SPACING OF LIGHTS

(a) On a power-driven vessel of 20 metres or more in length the masthead lights shall be placed as follows :

(i) the forward masthead light, or if only one masthead light is carried, then that light, at a height above the hull of not less than 6 metres, and, if the breadth of the vessel exceeds 6 metres, then at a height above the hull not less than such breadth, so however that the light need not be placed at a greater height above the hull than 12 metres;

(ii) when two masthead lights are carried the after one shall be at least 4.5 metres vertically higher than the forward one.

(b) The vertical separation of masthead lights of power driven vessels shall be such that in all normal conditions of trim the after light will be seen over and separate from the forward light at a distance of 1,000 metres from the stem when viewed from sea level.

(c) The masthead light of a power driven vessel of 12 metres but less than 20 metres in length shall be placed at a height above the gunwale of not less than 2.5 metres.

(d) A power driven vessel of less than 12 metres in length may carry the uppermost light at a height of less than 2.5 metres above the gunwale. When, however, a masthead light is carried in addition to sidelights and a sternlight or the all round light prescribed in rule 23(d)(i) is carried in addition to side lights, then such masthead light or allround light shall be carried at least 1 metre higher than the sidelights.

(e) One of the two or three masthead lights prescribed for a power driven vessel when engaged in towing or pushing another vessel shall be placed in the same position as either the forward



Scanned by CamScanner

masthead light or the after masthead light; provided that, if carried on the aftermast, the lowest after masthead light shall be at least 4.5 metres vertically higher than the forward masthead light.

(f) (i) The masthead light or lights prescribed in Rule 23(a) shall be so placed as to be above and clear of all other lights and obstructions except as described in sub-paragraph (ii);

(ii) When it is impracticable to carry the all-round lights prescribed by Rule 27(b)(i) or Rule 28 below the masthead lights, they may be carried above the after masthead light(s) or vertically in between the forward masthead light(s) and after masthead light(s), provided that in the latter case the requirement of Section 3(c) of this Annex shall be complied with.

(g) The sidelights of a power driven vessel shall be placed at a height above the hull not greater than three quarters of that of the forward masthead light. They shall not be so low as to be interfered with by deck lights.

(h) The sidelights, if in a combined lantern and carried on a power-driven vessel of less than 20 metres in length, shall be placed not less than 1 metre below the masthead light.

(i) When the Rules prescribe two or three lights to be carried in a vertical line, they shall be spaced as follows :

(i) on a vessel of 20 metres in length or more such lights shall be spaced not less than 2 metres apart, and the lowest of these lights shall, except where a towing light is required, be placed at a height of not less than 4 metres above the hull;

(ii) On a vessel of less than 20 metres in length such lights shall be spaced not less than 1 metre apart and the lowest of these lights shall, except where a towing light is required, be placed at a height of not less than 2 metres above the gunwale.

(iii) when three lights are carried they shall be equally spaced.

(j) The lower of the two all round lights prescribed for a vessel when engaged in fishing shall be at a height above the sidelights not less than twice the distance between the two vertical lights.

(k) The forward anchor light prescribed in Rule 30(a)(i), when two are carried, shall not be less than 4.5 metres above the after one. On a vessel of 50 metres or more in length this forward anchor light shall be placed at a height of not less than 6 metres above the hull.

## 3. HORIZONTAL POSITIONING AND SPACING OF LIGHTS

(a) When two masthead lights are prescribed for a power driven vessel, the horizontal distance between them shall not be less than one-half of the length of the vessel but need not be more than 100 metres. The forward light shall be placed not more than one quarter of the length of the vessel from the stem.

(b) On a power-driven vessel of 20 metres or more in length the sidelights shall not be placed in front of the forward masthead lights. They shall be placed at or near the side of the vessel.

(c) When the lights prescribed in Rule 27(b)(i) or Rule 28 are placed vertically between the forward masthead light(s) and the after masthead light(s) these all round lights shall be placed at a horizontal distance of not less than 2 metres from the fore and aft centreline of the vessel in the athwartship direction.



Scanned by CamScanner

(d) When only one masthead light is prescribed for a powerdriven vessel, this light shall be exhibited forward of amidships; except that a vessel of less than 20 metres in length need not exhibit this light forward of amidships but shall exhibit it as far forward as is practicable.

## 4. DETAILS OF LOCATION OF DIRECTION-INDICATING LIGHTS FOR FISHING VESSELS, DREDGERS AND VESSELS ENGAGED IN UNDERWATER OPERATIONS

(a) The light indicating the direction of the outlying gear from a vessel engaged in fishing as prescribed in Rule 26(c)(ii) shall be placed at a horizontal distance of not less than 2 metres and not more than 6 metres away from the two all round red and white lights. This light shall be placed not higher than the all round white light prescribed in Rule 26(c)(i) and not lower than the sidelights.

(b) The lights and shapes on a vessel engaged in dredging or underwater operations to indicate the obstructed side and/ or the side on which it is safe to pass, as prescribed in Rule 27(d)(i) and (ii), shall be placed at the maximum practical horizontal distance, but in no case less than 2 metres, from the lights or shapes prescribed in Rule 27(b) (i) and (ii). In no case shall the upper of these lights or shapes be at a greater height than the lower of the three lights or shapes prescribed in Rule 27(b)(i) and (ii).

## 5. SCREENS FOR SIDELIGHTS

The sidelights of vessels of 20 metres or more in length shall be fitted with inboard screens painted matt black, and meeting the requirements of Section 9 of this Annex. On vessels of less than 20 metres in length the side-lights, if necessary to meet the requirements of Section 9 of this Annex, shall be fitted with inboard matt black screens. With a combined lantern, using a single vertical filament and a very narrow division between the green and red sections, external screens need not be fitted.

## 6. SHAPES

(a) Shapes shall be black and of the following sizes :

(i) a ball shall have a diameter of not less than 0.6 metre;

(ii) a cone shall have a base diameter of not less than 0.6 metre and a height equal to its diameter;

(iii) a cylinder shall have a diameter of at least 0.6 metre and a height of twice its diameter;

(iv) a diamond shape shall consist of two cones as defined in (ii) above having a common base.

(b) The vertical distance between shapes shall be at least 1.5 metre.

(c) In a vessel of less than 20 metres in length shapes of lesser dimensions but commensurate with the size of the vessel may be used and the distance apart may be correspondingly reduced.

## 7. COLOUR SPECIFICATION OF LIGHTS

The chromaticity of all navigation lights shall conform to the following standards, which lie within the boundaries of the area of the diagram specified for each colour by the International Commission on Illumination (CIE).



Scanned by CamScanner

The boundaries of the area for each colour are given by indicating the corner co-ordinates, which are as follows :

| | | | | | | |
|---|---|---|---|---|---|---|
| (i) | WHITE | | | | | |
| | X | 0.525 | 0.525 | 0.452 | 0.310 | 0.310 | 0.443 |
| | Y | 0.382 | 0.440 | 0.440 | 0.348 | 0.283 | 0.382 |
| (ii) | GREEN | | | | | |
| | X | 0.028 | 0.009 | 0.300 | 0.203 | | |
| | Y | 0.385 | 0.723 | 0.511 | 0.356 | | |
| (iii) | RED | | | | | |
| | X | 0.680 | 0.660 | 0.735 | 0.721 | | |
| | Y | 0.320 | 0.320 | 0.265 | 0.259 | | |
| (iv) | YELLOW | | | | | |
| | X | 0.612 | 0.618 | 0.575 | 0.575 | | |
| | Y | 0.382 | 0.382 | 0.425 | 0.406 | | |

## 8. INTENSITY OF LIGHTS

(a) The minimum luminous intensity of lights shall be calculated by using the formula :

$I = 3.43 \times 10^6 \times T \times D^2 \times K^{-D}$

Where I is luminous intensity in candelas under service conditions,

T is threshold factor $2 \times 10^{-7}$ lux, (lux → luminous flux per unit area).

D is range of visibility (luminous range) of the light in nautical miles,

K is atmospheric transmissivity.

For prescribed lights the value of K shall be 0.8, corresponding to a meteorological visibility of approximately 13 nautical miles.

(b) A selection of figures derived from the formula is given in the following table :

| Range of visibility (luminous range) of light in nautical miles D | Luminous intensity of Light in candelas for K = 0.8 I |
|---|---|
| 1 | 0.9 |
| 2 | 4.3 |
| 3 | 12.0 |
| 4 | 27.0 |
| 5 | 52.0 |
| 6 | 94.0 |

*Note* : The maximum luminous intensity of navigation lights should be limited to avoid undue glare. This shall not be achieved by a variable control of the luminous intensity.



Atmospheric Transmissivity (K) :- In Search lighting : The ratio of the directly transmitted flux incident on a surface after passing through unit thickness of the atmosphere to the flux that would be incident on the same surface if the flux had passed through a vacuum.

Scanned by CamScanner

## 9. HORIZONTAL SECTORS

(a) (i) In the forward direction, sidelights as fitted on the vessel shall show the minimum required intensities. The intensities shall decrease to reach practical cut off between 1 degree and 3 degrees outside the prescribed sectors.

(ii) For sternlights and masthead lights at 22.5 degrees abaft the beam for sidelights, the minimum required intensities shall be maintained over the arc of the horizon up to 5 degrees within the limits of the sectors prescribed in Rule 21. From 5 degrees within the prescribed sectors the intensity may decrease by 50 per cent up to the prescribed limits; it shall decrease steadily to reach practical cut-off at not more than 5 degrees outside the prescribed sectors.

(b) (i) All round lights shall be so located as not to be obscured by masts, topmasts or structures within angular sectors of more than 6 degrees, except anchor lights prescribed in Rule 30, which need not be placed at an impracticable height above the hull.

(ii) If it is impracticable to comply with paragraph (b)(i) of this section by exhibiting only one all-round light, two all-round lights shall be used suitably positioned or screened so that they appear, as far as practicible, as one light at a distance of one mile.

## 10. VERTICAL SECTORS

(a) The vertical sectors of electric lights, as fitted, with the exception of lights on sailing vessels underway, shall ensure that:

(i) at least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal;

(ii) at least 60 per cent of the required minimum intensity is maintained from 7.5 degrees above to 7.5 degrees below the horizontal.

(b) In the case of sailing vessels underway the vertical sectors of electric lights as fitted shall ensure that :

(i) at least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal;

(ii) at least 50 per cent of the required minimum intensity is maintained from 25 degrees above to 25 degrees below the horizontal.

(c) In the case of lights other than electric these specifications shall be met as closely as possible.

## 11. INTENSITY OF NON ELECTRIC LIGHTS

Non-electric lights shall so far as practicable comply with the minimum intensities, as specified in the table given in Section 8 of this Annex.

## 12. MANOEUVRING LIGHT

Notwithstanding the provisions of paragraph 2(f) of this Annex, the manoeuvring light described in Rule 34 (b) shall be placed in the same fore and aft vertical plane as the masthead light or



Scanned by CamScanner

lights and, where practicable, at a minimum height of 2 metres vertically above the forward masthead light, provided that it shall be carried not less than 2 metres vertically above or below the after masthead light. On a vessel where only one masthead light is carried, the manoeuvring light, if fitted, shall be carried where it can best be seen, not less than 2 metres vertically apart from the masthead light.

## 13. HIGH-SPEED CRAFT

(a) The masthead light of high-speed craft may be placed at a height related to the breadth of the craft lower than that prescribed in paragraph 2(a)(i) of this annex, provided that the base angle of the isosceles triangles formed by the sidelights and masthead light, when seen in end elevation, is not less than 27 degrees.

(b) On high-speed craft of 50 metres or more in length, the vertical separation between foremast and mainmast light of 4.5 metres required by paragraph 2(a)(ii) of this annex may be modified provided that such distance shall not be less than the value determined by the following formula:

$$y = \frac{(\alpha + 170\psi)c}{1000} + 2$$

$\psi$ = PSi (Sigh)

where:

y is the height of the mainmast light above the foremast light in metres;

$\alpha$ is the height of the foremast light above the water surface in service condition in metres;

$\Psi$ is the trim in service condition in degrees.

$C$ is the horizontal separation of masthead lights in metres.

## 14. APPROVAL

The construction of lights and shapes and the installation of lights on board the vessel shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly.



Scanned by CamScanner

Rule 26.
(b)(i) O - Green
O - white } 0.9 m

(c)(i) O - Red
O - white } 0.9 m

# ANNEX II

## ADDITIONAL SIGNALS FOR FISHING VESSELS FISHING IN CLOSE PROXIMITY

### 1. GENERAL

The lights mentioned herein shall, if exhibited in pursurance of Rule 26(d), be placed where they can best be seen. They shall be at least 0.9 metre apart but at a lower level than lights prescribed in Rule 26(b)(i) and (c)(i). The lights shall be visible all-round the horizon at a distance of at least 1 mile but at a lesser distance than the lights prescribed by these Rules for fishing vessels.

### 2. SIGNALS FOR TRAWLERS

(a) Vessels of 20 metres or more in length when engaged in trawling, whether using demersal or pelagic gear, shall exhibit:

(i) when shooting their nets: two white lights in a vertical line;

(ii) when hauling their nets: one white light over one red light in a vertical line;

(iii) when the net has come fast upon an obstruction: two red lights in a vertical line.

(b) Each vessel of 20 metres or more in length engaged in pair trawling shall exhibit:

(i) by night, a searchlight directed forward and in the direction of the other vessel of the pair.

(ii) when shooting or hauling their nets or when their nets have come fast upon an obstruction, the lights prescribed in 2(a) above.

(c) A vessel of less than 20 metres in length engaged in trawling, whether using demersal or pelagic gear or engaged in pair trawling, may exhibit the lights prescribed in paragraphs (a) or (b) of this section, as appropriate.

### 3. SIGNALS FOR PURSE SEINERS

Vessels engaged in fishing with purse seine gear may exhibit two yellow lights in a vertical line. These lights shall flash alternately every second and with equal light and occultation duration. These lights may be exhibited only when the vessel is hampered by its fishing gear.



Hampered = hinder or impede the movement or progress

→ yellow
→ yellow

Scanned by CamScanner

(b) (i) 70-200 Hz vessels ≥ 200 m
(ii) 130-350 Hz vessels > 75 m < 200 m.
(iii) 250-700 Hz vessels < 75 m.
} length

# ANNEX III

## TECHNICAL DETAILS OF SOUND SIGNAL APPLIANCES

### 1. WHISTLES

(a) FREQUENCIES AND RANGE OF AUDIBILITY

The fundamental frequency of the signal shall lie within the range 70-700 Hz. The range of audibility of the signal from a whistle shall be determined by those frequencies, which may include the fundamental and/or one or more higher freuencies, which lie within the range 180-700 Hz (± 1%) for a vessel of 20 metres or more in length, or 180-2100 (± 1%) for a vessel of less than 20 metres in length and which provide the sound pressure levels specified in paragraph 1(c) below.

(b) LIMITS OF FUNDAMENTAL FREQUENCIES

To ensure a wide variety of whistle characteristics, the fundamental frequency of a whistle shall be between the following limits :

(i) 70-200 Hz, for a vessel 200 metres or more in length;

(ii) 130-350 Hz, for a vessel 75 metres but less than 200 metres in length;

(iii) 250-700 Hz, for a vessel less than 75 metres in length.

(c) SOUND SIGNAL INTENSITY AND RANGE OF AUDIBILITY

A whistle fitted in a vessel shall provide, in the direction of maximum intensity of the whistle and at a distance of 1 metre from it, a sound pressure level in at least $^{1}/_{3rd}$ octave band within the range of frequencies 180-700 Hz (±1%) for a vessel of 20 metres or more in length, or 180-2100 Hz (±1%) for a vessel of less than 20 metres in length, of not less than the appropriate figure given in the table below.



Scanned by CamScanner

| Length of vessel in metres | $^1/_{3rd}$ octave band level at 1 metre in dB referred to $2 \times 10^{-5}$ N/m$^2$ | Audibility range in nautical miles |
|---|---|---|
| 200 or more | 143 | 2 |
| 75 but less than 200 | 138 | 1.5 |
| 20 but less than 75 | 130 | 1 |
| Less than 20 | 120* | 0.5 |
| | 115† | |
| | 111‡ | |

* When the measured frequencies lie within the range 180-450 Hz

† When the measured frequencies lie within the range 450-800 Hz

‡ When the measured frequencies lie within the range 800-2100 Hz

The range of audibility in the table above is for information and is approximately the range at which a whistle may be heard on its forward axis with 90 per cent probability in conditions of still air on board a vessel having average background noise level at the listening posts (taken to be 68 dB in the octave band centred on 250 Hz and 63 dB in the octave band centred on 500 Hz). In practice the range at which a whistle may be heard is extremely variable and depends critically on weather conditions; the values given can be regarded as typical but under conditions of strong wind or high ambient noise level at the listening post the range may be much reduced.

(d) DIRECTIONAL PROPERTIES

The sound pressure level of a directional whistle shall be not more than 4 dB below the prescribed sound pressure level on the axis at any direction in the horizontal plane within ± 45 degrees of the axis. The sound pressure level at any other direction in the horizontal plane shall be not more than 10 dB below the prescribed sound pressure level on the axis, so that the range in any direction will be at least half the range on the forward axis. The sound pressure level shall be measured in that $^1/_{3rd}$ octave band which determines the audibility range.

(e) POSITIONING OF WHISTLES

When a directional whistle is to be used as the only whistle on a vessel, it shall be installed with its maximum intensity directed straight ahead.

A whistle shall be placed as high as practicable on a vessel, in order to reduce interception of the emitted sound by obstructions and also to minimize hearing damage risk to personnel. The sound pressure level of the vessel's own signal at listening posts shall not exceed 110 dB (A) and so far as practicable should not exceed 100 dB (A).

(f) FITTING OF MORE THAN ONE WHISTLE

If whistles are fitted at a distance apart of more than 100 metres, it shall be so arranged that they are not sounded simultaneously.



Scanned by CamScanner

(g) COMBINED WHISTLE SYSTEMS

If due to the presence of obstructions the sound field of a single whistle or of one of the whistles referred to in paragraph 1(f) above is likely to have a zone of greatly reduced signal level, it is recommended that a combined whistle system be fitted so as to overcome this reduction. For the purposes of the Rules a combined whistle system is to be regarded as single whistle. The whistles of a combined system shall be located at distance apart of not more than 100 metres and arranged to be sounded simultaneously. The frequency of any one whistle shall differ from those of the others by at least 10 Hz.

## 2. BELL OR GONG

(a) INTENSITY OF SIGNAL

A bell or gong, or other device having similar sound characteristics shall produce a sound pressure level of not less than 110 dB at a distance of 1 metre from it.

(b) CONSTRUCTION

Bells and gongs shall be made of corrosion-resistant material and designed to give a clear tone. The diameter of the mouth of the bell shall be not less than 300 mm for vessels of 20 metres or more in length. Where practicable, a powder-driven bell striker is recommended to ensure constant force but manual operation shall be possible. The mass of the striker shall be not less than 3% of the mass of the bell.

## 3. APPROVAL

The construction of sound signal appliances, their performance and their installation on board the vessel shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly.



Scanned by CamScanner

## ANNEX IV

### *DISTRESS SIGNALS*

1. The following signals, used or exhibited either together or separately, indicate distress and need of assistance :

(a) a gun or other explosive signal fired at intervals of about a minute;

(b) a continuous sounding with any fog-signalling apparatus;

(c) rockets or shells, throwing red stars fired one at a time at short intervals;

(d) a signal made by any signalling method consisting of the group
– – – — — — — – – – (SOS) in the Morse Code;

(e) a signal sent by radiotelephony consisting of the spoken word "MAYDAY";

(f) the International Code Signal of distress indicated by N.C.;

(g) a signal consisting of a square flag having above or below it a ball or anything resembling a ball;

(h) flames on the vessel (as from a burning tar barrel, oil barrel, etc.).

(i) a rocket parachute flare or a hand flare showing a red light;

(j) a smoke signal giving off orange coloured smoke;

(k) slowly and repeatedly raising and lowering arms out stretched to each side;

(l) a distress alert by means of digital selective calling (DSC) transmitted on

(i) VHF channel 70, or

(ii) MF/HF on the frequencies 2187.5 kHz, 8414.5 kHz, 4207.5 kHz, 6312 kHz, 12577 kHz or 16804.5 kHz;

(m) a ship-to-shore distress alert transmitted by the ship's Inmarsat or other mobile satellite service provider ship earth station;



Scanned by CamScanner

(14) (n) signals transmitted by emergecy position-indicating raido beacons;

(15) (o) approved signals transmitted by radio communication systems, including survival craft radar transponders.

2. The use or exhibition of any of the foregoing signals except for the purpose of indicating distress and need of assistance and the use of other signals which may be confused with any of the above signals is prohibited.

3. Attention is drawn to the relevant sections of the International Code of Signals, the International Aeronautical and Maritime Search and Rescue Manual, Volume III, and the following signals:

(a) a piece of orange coloured canvas with either a black square and circle or other appropriate symbol (for identification from the air);

(b) a dye marker.

garbage colour code

1. Domestic - yellow
2. Plastic - red
3. food waste - blue
4. cargo residues - green
5. incinerator ashes - grey
6. cooking oil - black



Scanned by CamScanner

# CHAPTER II

## I.M.O.'s GUIDANCE FOR THE UNIFORM APPLICATION OF CERTAIN RULES OF THE 1972 COLLISION REGULATIONS

The following guidance is provided to assist seafarers and all others concerned in the application of certain rules of the International Regulations for Preventing Collisions at Sea, 1972.

**1. Clarification of the definition "Vessel constrained by her draught", Rule 3(h)**

*Not only the depth of water but also the available navigable water width should be used as a* factor to determine whether a vessel may be regarded as constrained by her draught. When determining this, due account should also be taken of the effect of a small underkeel clearance on manoeuvrability of the vessel and thus her ability to deviate from the course she is following. A vessel navigating in an area with a small underkeel clearance but with adequate space to take avoiding action should not be regarded as a vessel constrained by her draught.

**2. Clarification of the application of the word "underway", Rule 3(i)**

When applying the definition of the term "underway" mariners should also have regard to Rule 35(b) where it is indicated that a vessel may be underway but stopped and making no way through the water.

**3. Clarification of the implication of the words "not to impede" as appearing in Rule 9(b), (c) and (d), 10(i) and (j) and 18(d)**

When a vessel, is required not to impede the passage of another vessel such vessel, shall so far as practicable navigate in such a way as to avoid the development of risk of collision. If, however, a situation has developed so as to involve risk of collision; the relevent Steering and Sailing Rules shall be complied with.

**4. Clarification of the relation between Rule 10 and the Rules of Part B, Sections II and III**

A vessel navigating in or near a traffic separation scheme adopted by the Organization shall, in



Scanned by CamScanner

particular, comply with Rule 10 of the International Regulations for Preventing Collisions at Sea, 1972, to minimize the development of risk of collision with another vessel. The other Rules of the 1972 Collision Regulations apply in all respects, and particularly the Rules of Part B, Sections II and III, if risk of collision with another vessel is deemed to exist.

**5. Clarification of the transference within a lane, Rule 10(b)(i)**

It is within the ordinary practice of prudent seamanship and in keeping with the provisions of Rule 10 of the 1972 Collision Regulations that a vessel using a traffic lane may make a transfer within a lane from one side to the other, provided such a transfer is accomplished at as small an angle to the general direction of traffic flow as is practicable.

**6. Clarification on the use of inshore traffic zones by small vessels, Rule 10(d)**

To comply with Rule 10(j) and for reasons of safe navigation a vessel of less than 20 metres in length or a sailing vessel, even when through traffic, may use inshore traffic zones.

**7. Clarification of the relation between Rule 18(d) and the Rules of Part B, Sections II and III**

A vessel constrained by her draught shall, when risk of collision with another vessel in a crossing or head-on situation exists, apply the relevant Steering and Sailing Rules as a powerdriven vessel. She should, when showing the signals prescribed by Rule 28, have her engines ready for immediate manoeuvre and proceed at a safe speed as required by Rule 6.



Scanned by CamScanner

# CHAPTER III

## ADOPTION OF AMENDMENTS TO THE ANNEX TO THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW), 1978 by STCW CONFERENCE, JUNE 2010.

In Accordance with the convention the following text will be deemed to have been accepted on 1 July 2011, unless, prior to that date, more than one third of Parties to the Convention or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more have notified the Secretary-General that they object to the amendments; and further the amendments annexed here shall enter into force on 1 January 2012 upon being deemed to have been accepted in accordance with the above conditions;

**AMENDMENTS TO THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978**

## General provisions

### Regulation 1

**Definitions and clarifications**

1 For the purpose of the Convention, unless expressly provided otherwise:

.1 Regulations means regulations contained in the annex to the Convention;

.2 Approved means approved by the Party in accordance with these regulations;

.3 Master means the person having command of a ship;



Scanned by CamScanner

.4 Officer means a member of the crew, other than the master, designated as such by national law or regulations or, in the absence of such designation, by collective agreement or custom;

.5 Deck officer means an officer qualified in accordance with the provisions of chapter II of the Convention;

.6 Chief mate means the officer next in rank to the master and upon whom the command of the ship will fall in the event of the incapacity of the master;

.7 Engineer officer means an officer qualified in accordance with the provisions of regulation III/1, III/2 or III/3 of the Convention;

.8 Chief engineer officer means the senior engineer officer responsible for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the ship;

.9 Second engineer officer means the engineer officer next in rank to the chief engineer officer and upon whom the responsibility for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the ship will fall in the event of the incapacity of the chief engineer officer;

.10 Assistant engineer officer means a person under training to become an engineer officer and designated as such by national law or regulations;

.11 Radio operator means a person holding an appropriate certificate issued or recognized by the Administration under the provisions of the Radio Regulations;

.12 GMDSS radio operator means a person who is qualified in accordance with the provisions of chapter IV of the Convention;

.13 Rating means a member of the ship's crew other than the master or an officer;

.14 Near-coastal voyages means voyages in the vicinity of a Party as defined by that Party;

.15 Propulsion power means the total maximum continuous rated output power, in kilowatts, of all the ship's main propulsion machinery which appears on the ship's certificate of registry or other official document;

.16 Radio duties include, as appropriate, watchkeeping and technical maintenance and repairs conducted in accordance with the Radio Regulations, the International Convention for the Safety of Life at Sea and, at the discretion of each Administration, the relevant recommendations of the Organization;

.17 Oil tanker means a ship constructed and used for the carriage of petroleum and petroleum products in bulk;

.18 Chemical tanker means a ship constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17 of the International Bulk Chemical Code;

.19 Liquefied gas tanker means a ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other product listed in chapter 19 of the International Gas Carrier Code;



Scanned by CamScanner

.20 Passenger ship means a ship as defined in the International Convention for the Safety of Life at Sea, 1974, as amended;

.21 Ro-ro passenger ship means a passenger ship with ro-ro cargo spaces or special category spaces as defined in the International Convention for the Safety of Life at Sea, 1974, as amended;

.22 Month means a calendar month or 30 days made up of periods of less than one month;

.23 STCW Code means the Seafarers' Training, Certification and Watchkeeping (STCW) Code as adopted by the 1995 Conference resolution 2, as it may be amended;

.24 Function means a group of tasks, duties and responsibilities, as specified in the STCW Code, necessary for ship operation, safety of life at sea or protection of the marine environment;

.25 Company means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the shipowner and who, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed on the company by these regulations;

.26 Seagoing service means service on board a ship relevant to the issue or revalidation of a certificate or other qualification;

.27 ISPS Code means the International Ship and Port Facility Security (ISPS) Code adopted on 12 December 2002, by resolution 2 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as may be amended by the Organization;

.28 Ship security officer means the person on board the ship, accountable to the master, designated by the Company as responsible for the security of the ship including implementation and maintenance of the ship security plan and liaison with the Company security officer and port facility security officers;

.29 Certificate of competency means a certificate issued and endorsed for masters, officers and GMDSS radio operators in accordance with the provisions of chapters II, III, IV or VII of this annex and entitling the lawful holder thereof to serve in the capacity and perform the functions involved at the level of responsibility specified therein;

.30 Certificate of proficiency means a certificate, other than a certificate of competency issued to a seafarer, stating that the relevant requirements of training, competencies or seagoing service in the Convention have been met;

.31 Security duties include all security tasks and duties on board ships as defined by chapter XI-2 of the International Convention for the Safety of Life at Sea (SOLAS 1974, as amended) and the International Ship and Port Facility Security (ISPS) Code;

.32 Electro-technical officer means an officer qualified in accordance with the provisions of regulation III/6 of the Convention;

.33 Able seafarer deck means a rating qualified in accordance with the provisions of regulation II/5 of the Convention;



Scanned by CamScanner

.34 Able seafarer engine means a rating qualified in accordance with the provisions of regulation III/5 of the Convention;

.35 Electro-technical rating means a rating qualified in accordance with the provisions of regulation III/7 of the Convention; and

.36 Documentary evidence means documentation, other than a certificate of competency or certificate of proficiency, used to establish that the relevant requirements of the Convention have been met.

2 These regulations are supplemented by the mandatory provisions contained in part A of the STCW Code and:

.1 any reference to a requirement in a regulation also constitutes a reference to the corresponding section of part A of the STCW Code;

.2 in applying these regulations, the related guidance and explanatory material contained in part B of the STCW Code should be taken into account to the greatest degree possible in order to achieve a more uniform implementation of the Convention provisions on a global basis;

.3 amendments to part A of the STCW Code shall be adopted, brought into force and take effect in accordance with the provisions of article XII of the Convention concerning the amendment procedure applicable to the annex; and

.4 part B of the STCW Code shall be amended by the Maritime Safety Committee in accordance with its rules of procedure.

3 The references made in article VI of the Convention to "the Administration" and "the issuing Administration" shall not be construed as preventing any Party from issuing and endorsing certificates under the provisions of these regulations.

## Regulation 2

### Certificates and endorsements

1 Certificates of competency shall be issued only by the Administration, following verification of the authenticity and validity of any necessary documentary evidence.

2 Certificates issued in accordance with the provisions of regulations V/1-1 and V/1-2 to masters and officers shall only be issued by an Administration.

3 Certificates shall be in the official language or languages of the issuing country. If the language used is not English, the text shall include a translation into that language.

4 In respect of radio operators, Parties may:

.1 include the additional knowledge required by the relevant regulations in the examination for the issue of a certificate complying with the Radio Regulations; or



Scanned by CamScanner

.2 issue a separate certificate indicating that the holder has the additional knowledge required by the relevant regulations.

5 The endorsement required by article VI of the Convention to attest the issue of a certificate shall only be issued if all the requirements of the Convention have been complied with.

6 At the discretion of a Party, endorsements may be incorporated in the format of the certificates being issued as provided for in section A-I/2 of the STCW Code. If so incorporated, the form used shall be that set forth in section A-I/2, paragraph 1. If issued otherwise, the form of endorsements used shall be that set forth in paragraph 2 of that section.

7 An Administration which recognizes under regulation I/10:

.1 a certificate of competency; or

.2 a certificate of proficiency issued to masters and officers in accordance with the provisions of regulations V/1-1 and V/1-2 shall endorse such certificate to attest its recognition only after ensuring the authenticity and validity of the certificate.

The endorsement shall only be issued if all requirements of the Convention have been complied with. The form of the endorsement used shall be that set forth in paragraph 3 of section A-I/2 of the STCW Code.

8 The endorsements referred to in paragraphs 5, 6 and 7:

.1 may be issued as separate documents;

.2 shall be issued by the Administration only;

.3 shall each be assigned a unique number, except that endorsements attesting the issue of a certificate may be assigned the same number as the certificate concerned, provided that number is unique; and

.4 shall expire as soon as the certificate endorsed expires or is withdrawn, suspended or cancelled by the Party which issued it and, in any case, not more than five years after their date of issue.

9 The capacity in which the holder of a certificate is authorized to serve shall be identified in the form of endorsement in terms identical to those used in the applicable safe manning requirements of the Administration.

10 Administrations may use a format different from the format given in section A-I/2 of the STCW Code, provided that, as a minimum, the required information is provided in Roman characters and Arabic figures, taking into account the variations permitted under section A-I/2.

11 Subject to the provisions of regulation I/10, paragraph 5, any certificate required by the Convention must be kept available in its original form on board the ship on which the holder is serving.

12 Each Party shall ensure that certificates are issued only to candidates who comply with the requirements of this regulation.

13 Candidates for certification shall provide satisfactory proof:

.1 of their identity;



Scanned by CamScanner

.2 that their age is not less than that prescribed in the regulation relevant to the certificate applied for;

.3 that they meet the standards of medical fitness specified in section A-I/9 of the STCW Code;

.4 of having completed the seagoing service and any related compulsory training required by these regulations for the certificate applied for; and

. 5 that they meet the standards of competence prescribed by these regulations for the capacities, functions and levels that are to be identified in the endorsement to the certificate.

14 Each Party undertakes to maintain a register or registers of all certificates and endorsements for masters, officers, and, as applicable, ratings which are issued, have expired or have been revalidated, suspended, cancelled or reported lost or destroyed and of dispensations issued.

15 Each Party undertakes to make available information on the status of such certificates of competency, endorsements and dispensations to other Parties and companies which request verification of the authenticity and validity of certificates produced to them by seafarers seeking recognition of their certificates under regulation I/10 or employment on board ship.

16 As of 1 January 2017, the information on the status of information required to be available in accordance with paragraph 15 of this regulation shall be made available, in the English language, through electronic means.

## Regulation 3

### Principles governing near-coastal voyages

1 Any Party defining near-coastal voyages for the purpose of the Convention shall not impose training, experience or certification requirements on the seafarers serving on board the ships entitled to fly the flag of another Party and engaged on such voyages in a manner resulting in more stringent requirements for such seafarers than for seafarers serving on board ships entitled to fly its own flag. In no case shall any such Party impose requirements in respect of seafarers serving on board ships entitled to fly the flag of another Party in excess of those of the Convention in respect of ships not engaged on near-coastal voyages.

2 A Party that, for ships afforded the benefits of the near-coastal voyage provisions of the Convention, which includes voyages off the coast of other Parties within the limits of their near-coastal definition, shall enter into an undertaking with the Parties concerned specifying the details of both involved trading areas and other relevant conditions.

3 With respect to ships entitled to fly the flag of a Party regularly engaged on near-coastal voyages off the coast of another Party, the Party whose flag the ship is entitled to fly shall prescribe training, experience and certification requirements for seafarers serving on such ships at least equal to those of the Party off whose coast the ship is engaged, provided that they do not exceed the requirements of the Convention in respect of ships not engaged on near-coastal voyages. Seafarers serving on a ship which extends its voyage beyond what is defined as a



Scanned by CamScanner

near-coastal voyage by a Party and enters waters not covered by that definition shall fulfil the appropriate competency requirements of the Convention.

4 A Party may afford a ship which is entitled to fly its flag the benefits of the near-coastal voyage provisions of the Convention when it is regularly engaged off the coast of a non-Party on near-coastal voyages as defined by the Party.

5 The certificates of seafarers issued by a Party for its defined near-coastal voyages limits may be accepted by other Parties for service in their defined near-coastal voyages limits, provided the Parties concerned enter into an undertaking specifying the details of involved trading areas and other relevant conditions thereof.

6 Parties defining near-coastal voyages, in accordance with the requirements of this regulation, shall:

.1 meet the principles governing near-coastal voyages specified in section A-I/3;

.2 communicate to the Secretary-General, in conformity with the requirements of regulation I/7, the details of the provisions adopted; and

.3 incorporate the near-coastal voyages limits in the endorsements issued pursuant to regulation I/2, paragraphs 5, 6 or 7.

7 Nothing in this regulation shall, in any way, limit the jurisdiction of any State, whether or not a Party to the Convention.

## Regulation 4

### Control procedures

1 Control exercised by a duly authorized control officer under article X shall be limited to the following:

.1 verification in accordance with article X(1) that all seafarers serving on board who are required to be certificated in accordance with the Convention hold an appropriate certificate or a valid dispensation, or provide documentary proof that an application for an endorsement has been submitted to the Administration in accordance with regulation I/10, paragraph 5;

.2 verification that the numbers and certificates of the seafarers serving on board are in conformity with the applicable safe manning requirements of the Administration; and

.3 assessment, in accordance with section A-I/4 of the STCW Code, of the ability of the seafarers of the ship to maintain watchkeeping and security standards, as appropriate, as required by the Convention if there are clear grounds for believing that such standards are not being maintained because any of the following have occurred:

.3.1 the ship has been involved in a collision, grounding or stranding, or

.3.2 there has been a discharge of substances from the ship when under way, at anchor or at berth which is illegal under any international convention, or



Scanned by CamScanner

.3.3 the ship has been manoeuvred in an erratic or unsafe manner whereby routeing measures adopted by the Organization or safe navigation practices and procedures have not been followed, or

.3.4 the ship is otherwise being operated in such a manner as to pose a danger to persons, property, the environment, or a compromise to security.

2 Deficiencies which may be deemed to pose a danger to persons, property or the environment include the following:

.1 failure of seafarers to hold a certificate, to have an appropriate certificate, to have a valid dispensation or to provide documentary proof that an application for an endorsement has been submitted to the Administration in accordance with regulation I/10, paragraph 5;

.2 failure to comply with the applicable safe manning requirements of the Administration;

.3 failure of navigational or engineering watch arrangements to conform to the requirements specified for the ship by the Administration;

.4 absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radiocommunications or the prevention of marine pollution; and \

.5 inability to provide, for the first watch at the commencement of a voyage and for subsequent relieving watches, persons who are sufficiently rested and otherwise fit for duty.

3 Failure to correct any of the deficiencies referred to in paragraph 2, in so far as it has been determined by the Party carrying out the control that they pose a danger to persons, property or the environment, shall be the only grounds under article X on which a Party may detain a ship.

## Regulation 5

### National provisions

1 Each Party shall establish processes and procedures for the impartial investigation of any reported incompetency, act, omission or compromise to security that may pose a direct threat to safety of life or property at sea or to the marine environment by the holders of certificates or endorsements issued by that Party in connection with their performance of duties related to their certificates and for the withdrawal, suspension and cancellation of such certificates for such cause and for the prevention of fraud.

2 Each Party shall take and enforce appropriate measures to prevent fraud and other unlawful practices involving certificates and endorsements issued.

3 Each Party shall prescribe penalties or disciplinary measures for cases in which the provisions of its national legislation giving effect to the Convention are not complied with in respect of ships entitled to fly its flag or of seafarers duly certificated by that Party.

4 In particular, such penalties or disciplinary measures shall be prescribed and enforced in cases in which:



Scanned by CamScanner

.1 a company or a master has engaged a person not holding a certificate as required by the Convention;

.2 a master has allowed any function or service in any capacity required by these regulations to be performed by a person holding an appropriate certificate to be performed by a person not holding the required certificate, a valid dispensation or having the documentary proof *required by regulation I/10, paragraph 5; or*

.3 a person has obtained by fraud or forged documents an engagement to perform any function or serve in any capacity required by these regulations to be performed or filled by a person holding a certificate or dispensation.

5 A Party, within whose jurisdiction there is located any company which, or any person who, is believed on clear grounds to have been responsible for, or to have knowledge of, any apparent non-compliance with the Convention specified in paragraph 4, shall extend all co-operation possible to any Party which advises it of its intention to initiate proceedings under its jurisdiction.

## Regulation 6

### Training and assessment

**Each Party shall ensure that:**

.1 the training and assessment of seafarers, as required under the Convention, are administered, supervised and monitored in accordance with the provisions of section A-I/6 of the STCW Code; and

.2 those responsible for the training and assessment of competence of seafarers, as required under the Convention, are appropriately qualified in accordance with the provisions of section A-I/6 of the STCW Code for the type and level of training or assessment involved.

## Regulation 7

### Communication of information

1 In addition to the information required to be communicated by article IV, each Party shall provide to the Secretary-General, within the time periods prescribed and in the format specified in section A-I/7 of the STCW Code, such other information as may be required by the Code on other steps taken by the Party to give the Convention full and complete effect.

2 When complete information as prescribed in article IV and section A-I/7 of the STCW Code has been received and such information confirms that full and complete effect is given to the provisions of the Convention, the Secretary-General shall submit a report to this effect to the Maritime Safety Committee.

3 Following subsequent confirmation by the Maritime Safety Committee, in accordance with procedures adopted by the Committee, that the information which has been provided



Scanned by CamScanner

demonstrates that full and complete effect is given to the provisions of the Convention:

.1 the Maritime Safety Committee shall identify the Parties so concerned;

.2 review the list of Parties which communicated information that demonstrated that they give full and complete effect to the relevant provisions of the Convention, to retain in this list only the Parties so concerned; and

.3 other Parties shall be entitled, subject to the provisions of regulations I/4 and I/10, to accept, in principle, that certificates issued by or on behalf of the Parties identified in paragraph 3.1 are in compliance with the Convention.

4 Amendments to the Convention and STCW Code, with dates of entry into force later than the date information has been, or will be, communicated to the Secretary-General in accordance with the provisions of paragraph 1, are not subject to the provisions of section A-I/7, paragraphs 1 and 2.

## Regulation 8

### Quality standards

1 **Each Party shall ensure that:**

.1 in accordance with the provisions of section A-I/8 of the STCW Code, all training, assessment of competence, certification, including medical certification, endorsement and revalidation activities carried out by non-governmental agencies or entities under its authority are continuously monitored through a quality standards system to ensure achievement of defined objectives, including those concerning the qualifications and experience of instructors and assessors; and

.2 where governmental agencies or entities perform such activities, there shall be a quality *standards system.*

2 Each Party shall also ensure that an evaluation is periodically undertaken, in accordance with the provisions of section A-I/8 of the STCW Code, by qualified persons who are not themselves involved in the activities concerned. This evaluation shall include all changes to national regulations and procedures in compliance with the amendments to the Convention and STCW Code, with dates of entry into force later than the date information was communicated to the Secretary-General.

3 *A report containing the results of the evaluation* required by paragraph 2 shall be communicated to the Secretary-General in accordance with the format specified in section A-I/7 of the STCW Code.

## Regulation 9

### Medical standards

1 Each Party shall establish standards of medical fitness for seafarers and procedures for the



Scanned by CamScanner

issue of a medical certificate in accordance with the provisions of this regulation and of section A-I/9 of the STCW Code.

2 Each Party shall ensure that those responsible for assessing the medical fitness of seafarers are medical practitioners recognized by the Party for the purpose of seafarer medical examinations, in accordance with the provisions of section A-I/9 of the STCW Code.

3 Every seafarer holding a certificate issued under the provisions of the Convention, who is serving at sea, shall also hold a valid medical certificate issued in accordance with the provisions of this regulation and of section A-I/9 of the STCW Code.

4 Every candidate for certification shall:

.1 be not less than 16 years of age;

.2 provide satisfactory proof of his/her identity; and

.3 meet the applicable medical fitness standards established by the Party.

5 Medical certificates shall remain valid for a maximum period of two years unless the seafarer is under the age of 18, in which case the maximum period of validity shall be one year.\

6 If the period of validity of a medical certificate expires in the course of a voyage, then the medical certificate shall continue in force until the next port of call where a medical practitioner recognized by the Party is available, provided that the period shall not exceed three months.

7 In urgent cases the Administration may permit a seafarer to work without a valid medical certificate until the next port of call where a medical practitioner recognized by the Party is available, provided that:

.1 the period of such permission does not exceed three months; and

.2 the seafarer concerned is in possession of an expired medical certificate of recent date.

## Regulation 10

### Recognition of certificates

1 Each Administration shall ensure that the provisions of this regulation are complied with, in order to recognize, by endorsement in accordance with regulation I/2, paragraph 7, a certificate issued by or under the authority of another Party to a master, officer or radio operator and that:

.1 the Administration has confirmed, through an evaluation of that Party, which may include inspection of facilities and procedures, that the requirements of the Convention regarding standards of competence, training and certification and quality standards are fully complied with; and

.2 an undertaking is agreed with the Party concerned that prompt notification will be given of any significant change in the arrangements for training and certification provided in compliance with the Convention.



Scanned by CamScanner

2 Measures shall be established to ensure that seafarers who present, for recognition, certificates issued under the provisions of regulations II/2, III/2 or III/3, or issued under VII/1 at the management level, as defined in the STCW Code, have an appropriate knowledge of the maritime legislation of the Administration relevant to the functions they are permitted to perform.

3 Information provided and measures agreed upon under this regulation shall be communicated to the Secretary-General in conformity with the requirements of regulation I/7.

4 Certificates issued by or under the authority of a non-Party shall not be recognized.

5 Notwithstanding the requirement of regulation I/2, paragraph 7, an Administration may, if circumstances require, subject to the provisions of paragraph 1, allow a seafarer to serve for a period not exceeding three months on board a ship entitled to fly its flag, while holding an appropriate and valid certificate issued and endorsed as required by another Party for use on board that Party's ships but which has not yet been endorsed so as to render it appropriate for service on board ships entitled to fly the flag of the Administration. Documentary proof shall be readily available that application for an endorsement has been submitted to the Administration.

6 Certificates and endorsements issued by an Administration under the provisions of this regulation in recognition of, or attesting the recognition of, a certificate issued by another Party shall not be used as the basis for further recognition by another Administration.

## Regulation 11

### Revalidation of certificates

1 Every master, officer and radio operator holding a certificate issued or recognized under any chapter of the Convention other than chapter VI, who is serving at sea or intends to return to sea after a period ashore, shall, in order to continue to qualify for seagoing service, be required, at intervals not exceeding five years, to:

.1 meet the standards of medical fitness prescribed by regulation I/9; and

.2 establish continued professional competence in accordance with section A-I/11 of the STCW Code.

2 Every master, officer and radio operator shall, for continuing seagoing service on board ships for which special training requirements have been internationally agreed upon, successfully complete approved relevant training.

3 Every master and officer shall, for continuing seagoing service on board tankers, meet the requirements in paragraph 1 of this regulation and be required, at intervals not exceeding five years, to establish continued professional competence for tankers in accordance with section A-I/11, paragraph 3 of the STCW Code.

4 Each Party shall compare the standards of competence which it required of candidates for certificates issued before 1 January 2017 with those specified for the appropriate certificate in part A of the STCW Code, and shall determine the need for requiring the holders of such



Scanned by CamScanner

certificates to undergo appropriate refresher and updating training or assessment.

5 The Party shall, in consultation with those concerned, formulate or promote the formulation of a structure of refresher and updating courses as provided for in section A-I/11 of the STCW Code.

6 For the purpose of updating the knowledge of masters, officers and radio operators, each Administration shall ensure that the texts of recent changes in national and international regulations concerning the safety of life at sea, security and the protection of the marine environment are made available to ships entitled to fly its flag.

## Regulation 12

### Use of simulators

1 The performance standards and other provisions set forth in section A-I/12 and such other requirements as are prescribed in part A of the STCW Code for any certificate concerned shall be complied with in respect of:

.1 all mandatory simulator-based training;

.2 any assessment of competency required by part A of the STCW Code which is carried out by means of a simulator; and

.3 any demonstration, by means of a simulator, of continued proficiency required by part A of the STCW Code.

## Regulation 13

### Conduct of trials

1 These regulations shall not prevent an Administration from authorizing ships entitled to fly its flag to participate in trials.

2 For the purposes of this regulation, the term trial means an experiment or series of experiments, conducted over a limited period, which may involve the use of automated or integrated systems in order to evaluate alternative methods of performing specific duties or satisfying particular arrangements prescribed by the Convention, which would provide at least the same degree of safety and pollution prevention as provided by these regulations.

3 The Administration authorizing ships to participate in trials shall be satisfied that such trials are conducted in a manner that provides at least the same degree of safety and pollution prevention as provided by these regulations. Such trials shall be conducted in accordance with guidelines adopted by the Organization.

4 Details of such trials shall be reported to the Organization as early as practicable but not less than six months before the date on which the trials are scheduled to commence. The Organization shall circulate such particulars to all Parties.



Scanned by CamScanner

5 The results of trials authorized under paragraph 1, and any recommendations the Administration may have regarding those results, shall be reported to the Organization, which shall circulate such results and recommendations to all Parties.

6 Any Party having any objection to particular trials authorized in accordance with this regulation should communicate such objection to the Organization as early as practicable. The Organization shall circulate details of the objection to all Parties.

7 An Administration which has authorized a trial shall respect objections received from other Parties relating to such trial by directing ships entitled to fly its flag not to engage in a trial while navigating in the waters of a coastal State which has communicated its objection to the Organization.

8 An Administration which concludes, on the basis of a trial, that a particular system will provide at least the same degree of safety and pollution prevention as provided by these regulations may authorize ships entitled to fly its flag to continue to operate with such a system indefinitely, subject to the following requirements:

.1 the Administration shall, after results of the trial have been submitted in accordance with paragraph 5, provide details of any such authorization, including identification of the specific ships which may be subject to the authorization, to the Organization, which will circulate this information to all Parties;

.2 any operations authorized under this paragraph shall be conducted in accordance with any guidelines developed by the Organization, to the same extent as they apply during a trial;

.3 such operations shall respect any objections received from other Parties in ccordance with paragraph 7, to the extent such objections have not been withdrawn; and

.4 an operation authorized under this paragraph shall only be permitted pending a determination by the Maritime Safety Committee as to whether an amendment to the Convention would be appropriate, and, if so, whether the operation should be suspended or permitted to continue before the amendment enters into force.

9 At the request of any Party, the Maritime Safety Committee shall establish a date for the consideration of the trial results and for the appropriate determinations.

## Regulation 14

### Responsibilities of companies

1 Each Administration shall, in accordance with the provisions of section A-I/14, hold companies responsible for the assignment of seafarers for service in their ships in accordance with the provisions of the present Convention, and shall require every such company to ensure that:

.1 each seafarer assigned to any of its ships holds an appropriate certificate in accordance with the provisions of the Convention and as established by the Administration;



Scanned by CamScanner

.2 its ships are manned in compliance with the applicable safe manning requirements of the Administration;

.3 seafarers assigned to any of its ships have received refresher and updating training as required by the Convention;

.4 documentation and data relevant to all seafarers employed on its ships are maintained and readily accessible, and include, without being limited to, documentation and data on their experience, training, medical fitness and competency in assigned duties;

.5 seafarers, on being assigned to any of its ships, are familiarized with their specific duties and with all ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to their routine or emergency duties;

.6 the ship's complement can effectively coordinate their activities in an emergency situation and in performing functions vital to safety, security and to the prevention or mitigation of pollution; and

.7 at all times on board its ships there shall be effective oral communication in accordance with chapter V, regulation 14, paragraphs 3 and 4 of the SOLAS Convention.

## Regulation 15

### Transitional provisions

1 Until 1 January 2017, a Party may continue to issue, recognize and endorse certificates in accordance with the provisions of the Convention which applied immediately prior to 1 January 2012 in respect of those seafarers who commenced approved seagoing service, an approved education and training programme or an approved training course before 1 July 2013.

2 Until 1 January 2017, a Party may continue to renew and revalidate certificates and endorsements in accordance with the provisions of the Convention which applied immediately prior to 1 January 2012.



Scanned by CamScanner

# CHAPTER IV

# Master and deck department

## Regulation 1

### Mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more

1 Every officer in charge of a navigational watch serving on a seagoing ship of 500 gross tonnage or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 have approved seagoing service of not less than 12 months as part of an approved training programme which includes onboard training that meets the requirements of section A-II/1 of the STCW Code and is documented in an approved training record book, or otherwise have approved seagoing service of not less than 36 months;

.3 have performed, during the required seagoing service, bridge watchkeeping duties under the supervision of the master or a qualified officer for a period of not less than six months;

.4 meet the applicable requirements of the regulations in chapter IV, as appropriate, for performing designated radio duties in accordance with the Radio Regulations;

.5 have completed approved education and training and meet the standard of competence specified in section A-II/1 of the STCW Code; and

.6 meet the standards of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.



Scanned by CamScanner

## Regulation 2

### Mandatory minimum requirements for certification of masters and chief mates on *ships of 500 gross tonnage or more Master and chief mate* on ships of 3,000 gross tonnage or more

1 Every master and chief mate on a seagoing ship of 3,000 gross tonnage or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 meet the requirements for certification as an officer in charge of a navigational watch on *ships of 500 gross tonnage or more and have approved seagoing service in that capacity:*

.1.1 for certification as chief mate, not less than 12 months, and

.1.2 for certification as master, not less than 36 months; however, this period may be reduced to not less than 24 months if not less than 12 months of such seagoing service has been served as chief mate; and

.2 have completed approved education and training and meet the standard of competence specified in section A-II/2 of the STCW Code for masters and chief mates on ships of 3,000 gross tonnage or more. Master and chief mate on ships of between 500 and 3,000 gross tonnage

3 Every master and chief mate on a seagoing ship of between 500 and 3,000 gross tonnage shall hold a certificate of competency.

4 Every candidate for certification shall:

.1 for certification as chief mate, meet the requirements of an officer in charge of a navigational *watch on ships of 500 gross tonnage or more;*

.2 for certification as master, meet the requirements of an officer in charge of a navigational watch on ships of 500 gross tonnage or more and have approved seagoing service of not less than 36 months in that capacity; however, this period may be reduced to not less than 24 months if not less than 12 months of such seagoing service has been served as chief mate; and

.3 have completed approved training and meet the standard of competence specified in *section A-II/2 of the STCW* Code for masters and chief mates on ships of between 500 and 3,000 gross tonnage.

## Regulation 3

### Mandatory minimum requirements for certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage Ships not engaged on near-coastal voyages

1 Every officer in charge of a navigational watch serving on a seagoing ship of less than 500 gross



Scanned by CamScanner

tonnage not engaged on near-coastal voyages shall hold a certificate of competency for ships of 500 gross tonnage or more.

2 Every master serving on a seagoing ship of less than 500 gross tonnage not engaged on near-coastal voyages shall hold a certificate of competency for service as master on ships of between 500 and 3,000 gross tonnage. Ships engaged on near-coastal voyages Officer in charge of a navigational watch

3 Every officer in charge of a navigational watch on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall hold a certificate of competency.

4 Every candidate for certification as officer in charge of a navigational watch on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall:

.1 be not less than 18 years of age;

.2 have completed:

.2.1 special training, including an adequate period of appropriate seagoing service as required by the Administration, or

.2.2 approved seagoing service in the deck department of not less than 36 months;

.3 meet the applicable requirements of the regulations in chapter IV, as appropriate, for performing designated radio duties in accordance with the Radio Regulations;

.4 have completed approved education and training and meet the standard of competence specified in section A-II/3 of the STCW Code for officers in charge of a navigational watch on ships of less than 500 gross tonnage engaged on near-coastal voyages; and

.5 meet the standard of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

**Master**

5 Every master serving on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall hold a certificate of competency.

6 Every candidate for certification as master on a seagoing ship of less than 500 gross tonnage *engaged on near-coastal* voyages shall:

.1 be not less than 20 years of age;

.2 have approved seagoing service of not less than 12 months as officer in charge of a navigational watch;

.3 have completed approved education and training and meet the standard of competence specified in section A-II/3 of the STCW Code for masters on ships of less than 500 gross tonnage engaged on near-*coastal voyages; and*

.4 meet the standard of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.



Scanned by CamScanner

**Exemptions**

7 The Administration, if it considers that a ship's size and the conditions of its voyage are such as to render the application of the full requirements of this regulation and section A-II/3 of the STCW Code unreasonable or impracticable, may to that extent exempt the master and the officer in charge of a navigational watch on such a ship or class of ships from some of the requirements, bearing in mind the safety of all ships which may be operating in the same waters.

## Regulation 4

### Mandatory minimum requirements for certification of ratings forming part of a navigational watch

1 Every rating forming part of a navigational watch on a seagoing ship of 500 gross tonnage or more, other than ratings under training and ratings whose duties while on watch are of an unskilled nature, shall be duly certificated to perform such duties.

2 Every candidate for certification shall:

.1 be not less than 16 years of age;

.2 have completed:

.2.1 approved seagoing service including not less than six months of training and experience, or

.2.2 special training, either pre-sea or on board ship, including an approved period of seagoing service which shall not be less than two months; and

.3 meet the standard of competence specified in section A-II/4 of the STCW Code.

3 The seagoing service, training and experience required by subparagraphs 2.2.1 and 2.2.2 shall be associated with navigational watchkeeping functions and involve the performance of duties carried out under the direct supervision of the master, the officer in charge of the navigational watch or a qualified rating.

## Regulation 5

### Mandatory minimum requirements for certification of ratings as able seafarer deck

1 Every able seafarer deck serving on a seagoing ship of 500 gross tonnage or more shall be duly certificated.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 meet the requirements for certification as a rating forming part of a navigational watch;



Scanned by CamScanner

These requirements are not those for certification of Able Seamen as contained in the ILO Certification of Able Seamen Convention, 1946, or any subsequent convention.

.3 while qualified to serve as a rating forming part of a navigational watch, have approved seagoing service in the deck department of:

.3.1 not less than 18 months, or

.3.2 not less than 12 months and have completed approved training; and

.4 meet the standard of competence specified in section A-II/5 of the STCW Code.

3 Every Party shall compare the standards of competence which it required of Able Seamen for certificates issued before 1 January 2012 with those specified for the certificate in section A-II/5 of the STCW Code, and shall determine the need, if any, for requiring these personnel to update their qualifications.

4 Until 1 January 2012, a Party which is also a Party to the International Labour Organization Certification of Able Seamen Convention, 1946 (No. 74) may continue to issue, recognize and endorse certificates in accordance with the provisions of the aforesaid convention.

5 Until 1 January 2017, a Party which is also a Party to the International Labour Organization Certification of Able Seamen Convention, 1946 (No. 74) may continue to renew and revalidate certificates and endorsements in accordance with the provisions of the aforesaid convention.

6 Seafarers may be considered by the Party to have met the requirements of this regulation if they have served in a relevant capacity in the deck department for a period of not less than 12 months within the last 60 months preceding the entry into force of this regulation for that Party.



Scanned by CamScanner

# CHAPTER V

## Radiocommunication and radio operators

**Explanatory note**

Mandatory provisions relating to radio watchkeeping are set forth in the Radio Regulations and in the International Convention for the Safety of Life at Sea, 1974, as amended. Provisions for radio maintenance are set forth in the International Convention for the Safety of Life at Sea, 1974, as amended, and the guidelines adopted by the Organization*.

## Regulation 1

### Application

1 Except as provided in paragraph 2, the provisions of this chapter apply to radio operators on ships operating in the global maritime distress and safety system (GMDSS) as prescribed by the International Convention for the Safety of Life at Sea, 1974, as amended.

2 Radio operators on ships not required to comply with the provisions of the GMDSS in chapter IV of the SOLAS Convention are not required to meet the provisions of this chapter. Radio operators on these ships are, nevertheless, required to comply with the Radio Regulations. The Administration shall ensure that the appropriate certificates as prescribed by the Radio Regulations are issued to or recognized in respect of such radio operators.

## Regulation 2

### Mandatory minimum requirements for certification of GMDSS radio operators

1 Every person in charge of or performing radio duties on a ship required to participate in the GMDSS shall hold an appropriate certificate related to the GMDSS, issued or recognized by the



Scanned by CamScanner

Administration under the provisions of the Radio Regulations.

2 In addition, every candidate for certification of competency under this regulation for service on a ship, which is required by the International Convention for the Safety of Life at Sea, 1974, as amended, to have a radio installation, shall:

.1 be not less than 18 years of age; and

.2 have completed approved education and training and meet the standard of competence specified in section A-IV/2 of the STCW Code.

Refer to the Radio Maintenance Guidelines for the Global Maritime Distress and Safety System (GMDSS)

Related to Sea Areas A3 and A4 adopted by the Organization by resolution A.702(17).



Scanned by CamScanner

# CHAPTER VI

## Standards regarding special training requirements for personnel on certain types of ships

## Regulation 1

Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on oil and chemical tankers

1 Officers and ratings assigned specific duties and responsibilities related to cargo or cargo equipment on oil or chemical tankers shall hold a certificate in basic training for oil and chemical tanker cargo operations.

2 Every candidate for a certificate in basic training for oil and chemical tanker cargo operations shall have completed basic training in accordance with provisions of section A-VI/1 of the STCW Code and shall have completed:

.1 at least three months of approved seagoing service on oil or chemical tankers and meet the standard of competence specified in section A-V/1-1, paragraph 1 of the STCW Code; or

.2 an approved basic training for oil and chemical tanker cargo operations and meet the standard of competence specified in section A-V/1-1, paragraph 1 of the STCW Code.

3 Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on oil tankers shall hold a certificate in advanced training for oil tanker cargo operations.

4 Every candidate for a certificate in advanced training for oil tanker cargo operations shall:

.1 meet the requirements for certification in basic training for oil and chemical tanker cargo operations; and



Scanned by CamScanner

.2 while qualified for certification in basic training for oil and chemical tanker cargo operations, have:

.2.1 at least three months of approved seagoing service on oil tankers, or

.2.2 at least one month of approved onboard training on oil tankers in a supernumerary capacity, which includes at least three loading and three unloading operations and is documented in an approved training record book taking into account guidance in section B-V/1; and

.3 have completed approved advanced training for oil tanker cargo operations and meet the standard of competence specified in section A-V/1-1, paragraph 2 of the STCW Code.

5 Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on chemical tankers shall hold a certificate in advanced training for chemical tanker cargo operations.

6 Every candidate for a certificate in advanced training for chemical tanker cargo operations shall:

.1 meet the requirements for certification in basic training for oil and chemical tanker cargo operations; and

.2 while qualified for certification in basic training for oil and chemical tanker cargo operations, have:

.2.1 at least three months of approved seagoing service on chemical tankers, or

.2.2 at least one month of approved onboard training on chemical tankers in a supernumerary capacity, which includes at least three loading and three unloading operations and is documented in an approved training record book taking into account guidance in section B-V/1; and

.3 have completed approved advanced training for chemical tanker cargo operations and meet the standard of competence specified in section A-V/1-1, paragraph 3 of the STCW Code.

7 Administrations shall ensure that a certificate of proficiency is issued to seafarers who are qualified in accordance with paragraph 2, 4 or 6 as appropriate, or that an existing certificate of competency or certificate of proficiency is duly endorsed.

## Regulation 1-2

Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on liquefied gas tankers

1 Officers and ratings assigned specific duties and responsibilities related to cargo or cargo equipment on liquefied gas tankers shall hold a certificate in basic training for liquefied gas tanker cargo operations.



Scanned by CamScanner

2 Every candidate for a certificate in basic training for liquefied gas tanker cargo operations shall have completed basic training in accordance with provisions of section A-VI/1 of the STCW Code and shall have completed:

.1 at least three months of approved seagoing service on liquefied gas tankers and meet the standard of competence specified in section A-V/1-2, paragraph 1 of the STCW Code; or

.2 an approved basic training for liquefied gas tanker cargo operations and meet the standard of competence specified in section A-V/1-2, paragraph 1 of the STCW Code.

3 Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on liquefied gas tankers shall hold a certificate in advanced training for liquefied gas tanker cargo operations.

4 Every candidate for a certificate in advanced training for liquefied gas tanker cargo operations shall:

.1 meet the requirements for certification in basic training for liquefied gas tanker cargo operations; and

.2 while qualified for certification in basic training for liquefied gas tanker cargo operations, have:

.2.1 at least three months of approved seagoing service on liquefied gas tankers, or

.2.2 at least one month of approved onboard training on liquefied gas tankers in a supernumerary capacity, which includes at least three loading and three unloading operations and is documented in an approved training record book taking into account guidance in section B-V/1; and

.3 have completed approved advanced training for liquefied gas tanker cargo operations and meet the standard of competence specified in section A-V/1-2, paragraph 2 of the STCW Code.

5 Administrations shall ensure that a certificate of proficiency is issued to seafarers who are qualified in accordance with paragraph 2 or 4 as appropriate, or that an existing certificate of competency or certificate of proficiency is duly endorsed.

## Regulation 2

Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships

1 This regulation applies to masters, officers, ratings and other personnel serving on board passenger ships engaged on international voyages. Administrations shall determine the applicability of these requirements to personnel serving on passenger ships engaged on domestic voyages.



Scanned by CamScanner

2 Prior to being assigned shipboard duties on board passenger ships, seafarers shall have completed the training required by paragraphs 4 to 7 below in accordance with their capacity, duties and responsibilities.

3 Seafarers who are required to be trained in accordance with paragraphs 4, 6 and 7 below shall, at intervals not exceeding five years, undertake appropriate refresher training or be required to provide evidence of having achieved the required standard of competence within the previous five years.

4 Masters, officers and other personnel designated on muster lists to assist passengers in emergency situations on board passenger ships shall have completed training in crowd management as specified in section A-V/2, paragraph 1 of the STCW Code.

5 Personnel providing direct service to passengers in passenger spaces on board passenger ships shall have completed the safety training specified in section A-V/2, paragraph 2 of the STCW Code.

6 Masters, chief engineer officers, chief mates, second engineer officers and any person designated on muster lists of having responsibility for the safety of passengers in emergency situations on board passenger ships shall have completed approved training in crisis management and human behaviour as specified in section A-V/2, paragraph 3 of the STCW Code.

7 Masters, chief engineer officers, chief mates, second engineer officers and every person assigned immediate responsibility for embarking and disembarking passengers, loading, discharging or securing cargo, or closing hull openings on board ro-ro passenger ships shall have completed approved training in passenger safety, cargo safety and hull integrity as specified in section A-V/2, paragraph 4 of the STCW Code.

8 Administrations shall ensure that documentary evidence of the training which has been completed is issued to every person found qualified under the provisions of this regulation.



Scanned by CamScanner

# CHAPTER VII

## Watchkeeping

## Regulation 1

### Fitness for duty

1 Each Administration shall, for the purpose of preventing fatigue:

.1 establish and enforce rest periods for watchkeeping personnel and those whose duties involve designated safety, prevention of pollution and security duties in accordance with the provisions of section A-VIII/1 of the STCW Code; and

.2 require that watch systems are so arranged that the efficiency of all watchkeeping personnel is not impaired by fatigue and that duties are so organized that the first watch at the commencement of a voyage and subsequent relieving watches are sufficiently rested and otherwise fit for duty.

2 Each Administration shall, for the purpose of preventing drug and alcohol abuse, ensure that adequate measures are established in accordance with the provisions of section A-VIII/1 while taking into account the guidance given in section B-VIII/1 of the STCW Code.

## Regulation 2

### Watchkeeping arrangements and principles to be observed

1 Administrations shall direct the attention of companies, masters, chief engineer officers and all watchkeeping personnel to the requirements, principles and guidance set out in the STCW



Scanned by CamScanner

Code which shall be observed to ensure that a safe continuous watch or watches appropriate to the prevailing circumstances and conditions are maintained in all seagoing ships at all times.

2 Administrations shall require the master of every ship to ensure that watchkeeping arrangements are adequate for maintaining a safe watch or watches, taking into account the prevailing circumstances and conditions and that, under the master's general direction:

.1 officers in charge of the navigational watch are responsible for navigating the ship safely during their periods of duty, when they shall be physically present on the navigating bridge or in a directly associated location such as the chartroom or bridge control room at all times;

.2 radio operators are responsible for maintaining a continuous radio watch on appropriate frequencies during their periods of duty;

.3 officers in charge of an engineering watch, as defined in the STCW Code, under the direction of the chief engineer officer, shall be immediately available and on call to attend the machinery spaces and, when required, shall be physically present in the machinery space during their periods of responsibility;

.4 an appropriate and effective watch or watches are maintained for the purpose of safety at all times while the ship is at anchor or moored and, if the ship is carrying hazardous cargo, the organization of such watch or watches takes full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions prevailing on board, afloat or ashore; and

.5 as applicable, an appropriate and effective watch or watches are maintained for the purposes of security."



Scanned by CamScanner

# CHAPTER VIII

## TRAFFIC SEPARATION SCHEME

GENERAL PROVISIONS ON SHIPS' ROUTEING

### 1. OBJECTIVES

1.1 The purpose of ships' routeing is to improve the safety of navigation in converging areas and in areas where the density of traffic is great or where the freedom of movement of shipping is inhibited by restricted sea-room, the existence of obstructions to navigation, limited depths or unfavourable meteorological conditions.

1.2 The precise objectives of any routeing system will depend upon the particular hazardous circumstances which it is intended to alleviate, but may include some or all of the following :

(a) the separation of opposing streams of traffic so as to reduce the incidence of head-on encounters;

(b) the reduction of dangers of collision between crossing traffic and shipping in established traffic lanes;

(c) the simplication of the patterns of traffic flow in converging areas;

(d) the organization of safe traffic flow in areas of concentrated offshore exploration or exploitation;

(e) the organization of traffic flow so as to avoid areas where navigation by all ships or by certain classes of ship is dangerous or undesirable;

(f) the reduction of risks of grounding by providing special guidance to deep-draught vessels in areas where water depths are uncertain or critical;

(g) the guidance of traffic clear of fishing grounds or the organization of traffic through fishing grounds.



Scanned by CamScanner

## 2. DEFINITIONS

2.1 The following terms are used in connection with matters related to ships' routeing.

(a) *Routeing system*

Any system of one or more routes and/or routeing measures aimed at reducing the risk or casualties; it includes traffic separation schemes, two-way routes, recommended tracks, areas to be avoided, inshore traffic zones, roundabouts, precautionary areas and deep water routes.

(b) *Traffic separation scheme*

A routeing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.

(c) *Separation zone or line*

A zone or line separating the traffic lanes in which ships are proceeding in opposite or nearly opposite directions, or separating a traffic lane from the adjacent inshore traffic zone.

(d) *Traffic lane*

An area within defined limits in which one way traffic is established. Natural obstacles, including those forming separation zones, may constitute a boundary.

(e) *Roundabout*

A routeing measure comprising a separation point or circular separation point or circular separation zone and a circular traffic lane within defined limits. Traffic within the roundabout is separated by moving in a counterclockwise direction around the separation point or zone.

(f) *Inshore traffic zone*

A routeing measure comprising a designated area between the landward boundary of a traffic separation scheme and the adjacent coast, intended for local traffic.

(g) Two-way route

A route within defined limits inside which two-way traffic is established, aimed at providing safe passage of ships through waters where navigation is difficult or dangerous.

(h) *Recommended track*

A route which has been specially examined to ensure so far as possible that it is free of dangers and along which ships are advised to navigate.

(i) *Deep water route*

A route within defined limits which has been accurately surveyed for clearance of sea bottom and submerged obstacles as indicated on the chart.

(j) Precautionary area

A routeing measure comprising an area within defined limits where ships must navigate



Scanned by CamScanner

with particular caution and within which the direction of traffic flow may be recommended.

(k) Area to be avoided

A routeing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships, or certain classes of ship.

(l) Established direction of traffic flow

A traffic flow pattern indicating the directional movement of traffic as established within a traffic separation scheme.

(m) Recommended direction of traffic flow A traffic flow pattern indicating a recommended direction movement of traffic in a routeing system within which it is impractical or unnecessary to adopt an established direction of traffic flow.

*Procedures and functions of IMO*

## 3. PROCEDURES AND RESPONSIBILITIES

3.1 IMO is recognized as the only international body responsible for establishing and recommending measures on an international level concerning ships' routeing.

3.2 In deciding whether or not to adopt or amend a traffic separation scheme, IMO will consider whether :

(a) the aids to navigation proposed will enable mariners to determine their position with sufficient accuracy to navigate in the scheme in accordance with Rule 10 of the International Regulations for Preventing Collisions at Sea, 1972;

(b) the scheme takes account of the accepted planning considerations and complies with the design criteria for traffic separation schemes and with the established methods of routeing.

3.3 In deciding whether or not to adopt or amend a routeing system other than a traffic separation scheme, IMO will consider whether the aids to navigation are adequate for the purpose of the system and the system takes into account the relevant adopted criteria and methods.

3.4 IMO shall not adopt or amend any routeing system without the agreement of the interested coastal States, where that system may affect:

(a) their rights and practices in respect of the exploitation of living and mineral resources;

(b) the environment, traffic pattern or established routeing systems in the waters concerned;

(c) demands for improvements or adjustments in the navigational aids or hydrographic surveys in the waters concerned;

*Responsibilities of Governments and recommended practices*

3.5 A new routeing system adopted by IMO shall not come into force as an IMO adopted system before an effective date promulgated by the Government that proposed the system. That date shall not be earlier than a date agreed by the Organization. Either Notices to Mariners to amend charts or revised charts to depict the system shall be made available in ample time before the system comes into force.



Scanned by CamScanner

3.6 The selection and development of routeing systems is primarily the responsibility of the Governments concerned.

3.7 A Government proposing a new routeing system or an amendment to an adopted routeing system, any part of which lies beyond its territorial sea, should consult with IMO so that such system may be adopted or amended by IMO for international use. Such a system, when adopted, shall not be amended or suspended before consultation with and agreement by IMO, unless local conditions and the urgency of the case require that earlier action be taken. In considering the proposal, IMO shall take account of the objectives, procedures, responsibilities, methods and criteria for routeing systems as set out in these general provisions.

3.8 In an emergency such as might result from the unexpected blocking or obstruction of a traffic lane by a wreck or other hazard, immediate temporary changes in the use of the affected traffic separation scheme may be made by the responsible and sponsoring Government(s), with the object of directing traffic flow clear of the new hazard. In such cases, every possible measure shall be taken by the Government(s) concerned immediately to inform shipping of the hazard and of the temporary changes which have been made.

3.9 Governments are recommended to ensure, as far as practicable, that oil rigs, platforms and other similar structures are not established within routeing systems adopted by the Organization or near their terminations. When the temporary positioning of an exploration rig or a similar structure in an adopted traffic scheme cannot be avoided, the scheme should, if necessary, be amended temporarily in accordance with the guidelines given in Section 7.

3.10 If the above exploration activities lead to the finding of important exploitation prospects, the effect of subsequent exploitation on the safety of marine traffic should be considered carefully. If the establishment of permanent installations within a traffic separation scheme is unavoidable, permanent amendments to the scheme, if deemed necessary, should be submitted to IMO for adoption.

3.11 Governments establishing traffic separation schemes, no parts of which lie beyond their territorial seas, are requested to design them in accordance with IMO criteria for such schemes and submit them to IMO for adoption.

3.12 Where, for whatever reason, a Government decides not to submit a traffic separation scheme to IMO, it should, in promulgating the scheme to mariners, ensure that there are clear indications on charts and in nautical publications as to what rules apply to the scheme.

3.13 Governments establishing routeing systems, others than traffic separations schemes, no parts of which lie beyond their territorial seas, are recommended to follow the same procedure as that set out in paragraphs 3.11 and 3.12 above.

3.14 Nothing in the General Provisions on ship's Routeing shall prejudice the codification and development of the law of the sea by the United Nations Conference on the Law of the Sea convened pursuant to Resolution 2750 C (XXV) of the General Assembly of the United Nations nor the present or future claims and legal views of any State concerning the law of the sea and the nature and extent of coastal and flag State jurisdiction.

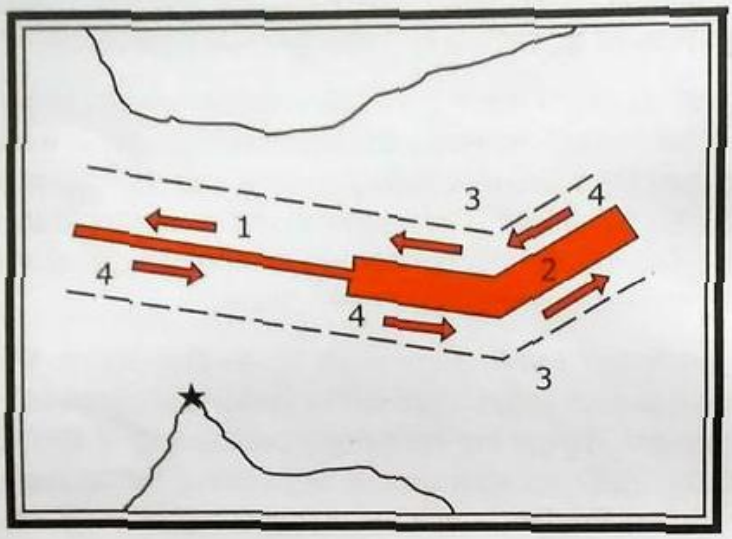


Scanned by CamScanner

## 4. METHODS

4.1 In meeting the objectives set out in Section 1 the following are among the methods which may be used :

(a) *The separation of opposing streams of traffic by separation zones, or lines where zones are not possible*




Traffic separation by separation zone and line

In this method streams of traffic proceeding in opposite or nearly opposite direction are separated by separation zones (2) or lines (1); the use of zones is to be preferred, but in narrow passages and *restricted waters it may be necessary to use a separation line rather than a zone* so as to allow more navigable space in the traffic lanes. A length of separation line may also be substituted for a zone in positions where this may encourage and facilitate correct procedures by crossing traffic. The outside limit (3) of such traffic separation schemes are the outer boundaries of the traffic lanes. The arrows (4) indicate the established direction of traffic flow.



Scanned by CamScanner

(b) *The separation of opposing schemes of traffic by natural obstructions and geographically defined objects*

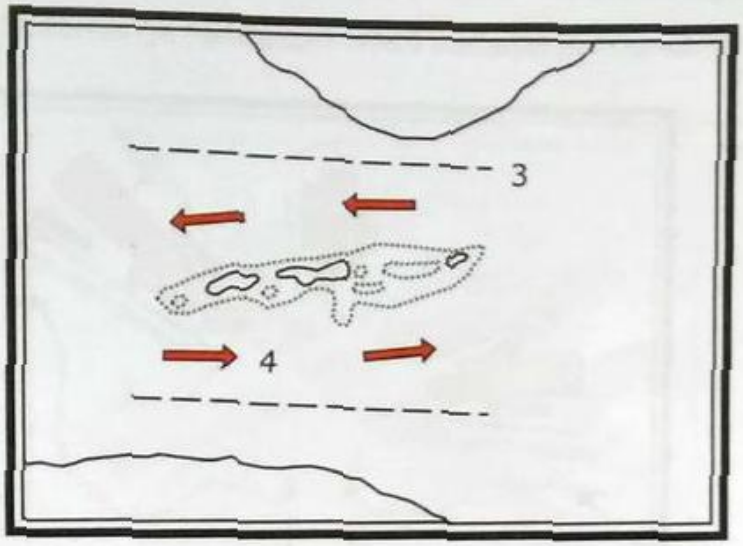



Fig. 2 Separation of traffic by natural obstructions and geographically defined objects

This methods is used where there is a defined area with obstructions such as islands, shoals or rocks restricting free movement and providing a natural division for opposing traffic streams.

(c) *The separation of through and local traffic by providing inshore traffic zones Local-traffic*

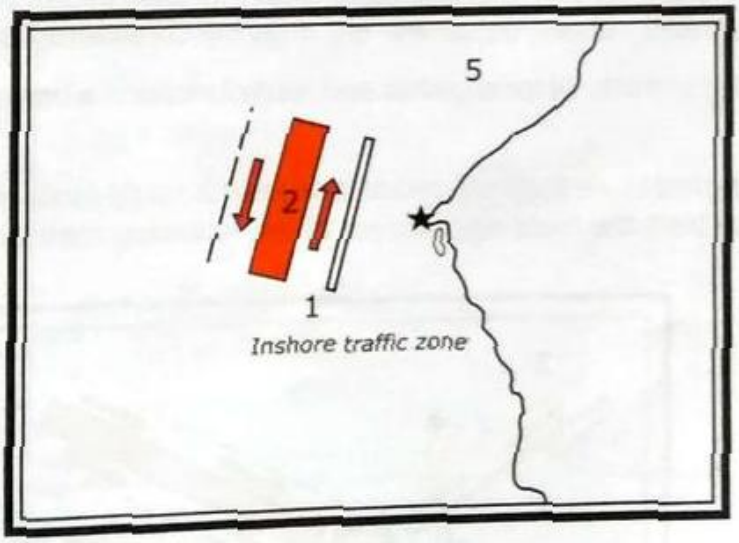



Fig. 3 Inshore traffic zone for local traffic

Beyond the outside limits of traffic separation schemes, ships may navigate in any direction. Where such areas lie between the traffic separation scheme and the coast they may be designated as inshore traffic zones (5) (see also Figure 4 and 9), with the purpose of keeping local traffic clear of the traffic separation scheme which should be used by through traffic.



Scanned by CamScanner

Traffic is inshore traffic zones is separated from traffic in the adjacent traffic lane by separation zones (2) or by separation lines (1) (see Figures 4 & 9).

(d) *The sectorial division of adjacent traffic separation schemes at approaches to focal points*

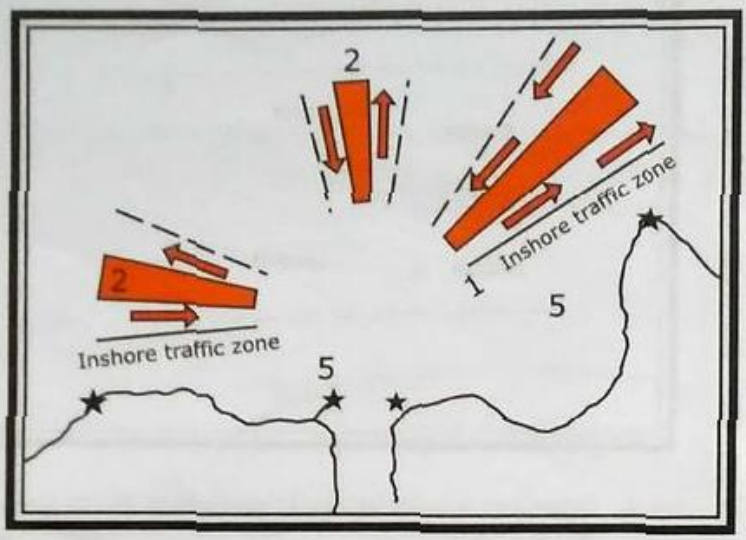



Fig. 4 Sectorial division of adjacent traffic separation schemes at approaches to focal points

This point is used where ships converge at a focal point or a small area from various directions. Port approaches, sea pilot stations, positions where landfall buoys or light vessels are located, entrances to channels, canals, estuaries, etc. may be considered as such focal points.

(e) *The routeing of traffic at focal points and route junctions where traffic separation schemes meet*

The routeing measure to be utilized at focal points, route junctions and intersections should be selected from the most appropriate of the following methods :

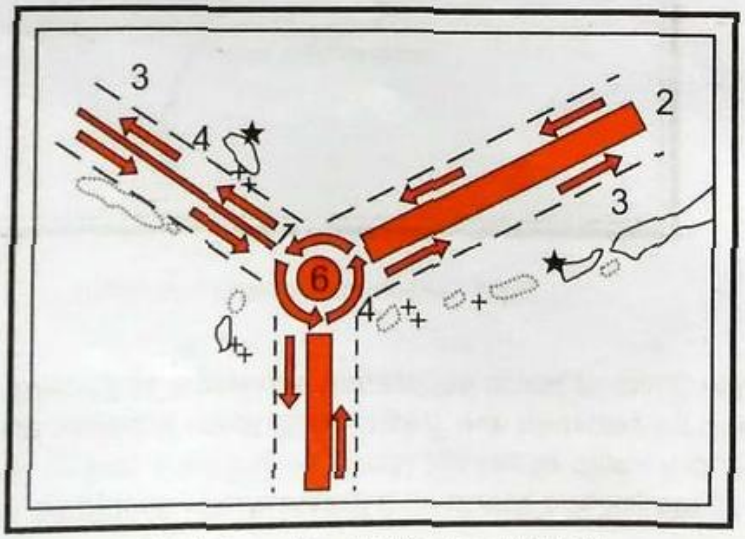



Fig. 5 Separation of traffic at a roundabout



Scanned by CamScanner

If the need can be demonstrated a roundabout may be used to guide traffic counterclockwise round a circular separation zone (6) or specified point, as illustrated above.

(ii) *Junctions*

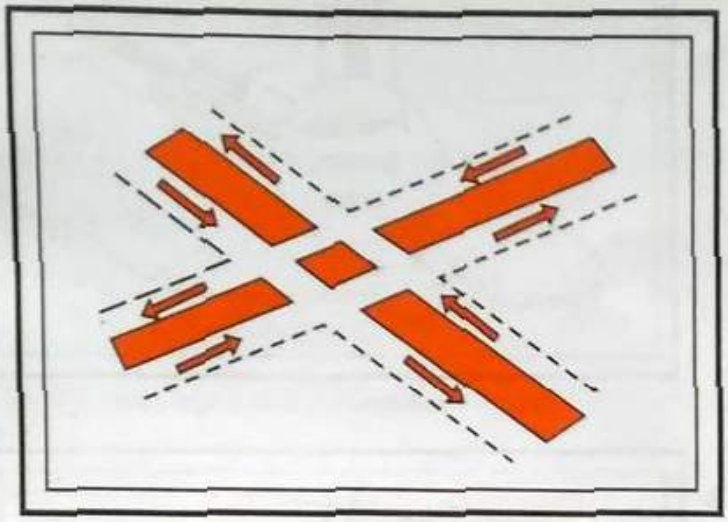


Fig. 6 Separation of traffic at a crossing

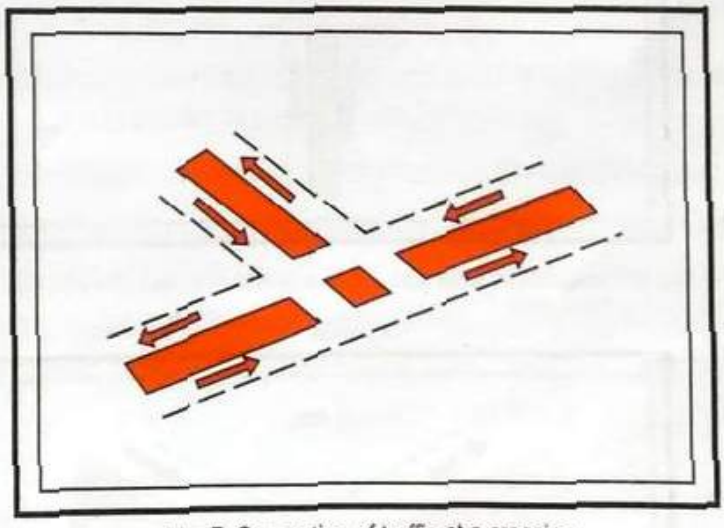


Fig. 7 Separation of traffic at a crossing

This method is used where two routes join or cross. The direction of traffic flow are established in the lanes of the adjoining schemes; the separation zone may be interrupted, as shown in Figures 6 & 7, or replaced by a separation line, in order to emphasize the correct method of crossing by traffic changing from or to the other scheme.



Scanned by CamScanner

(iii) *Precautionary areas*

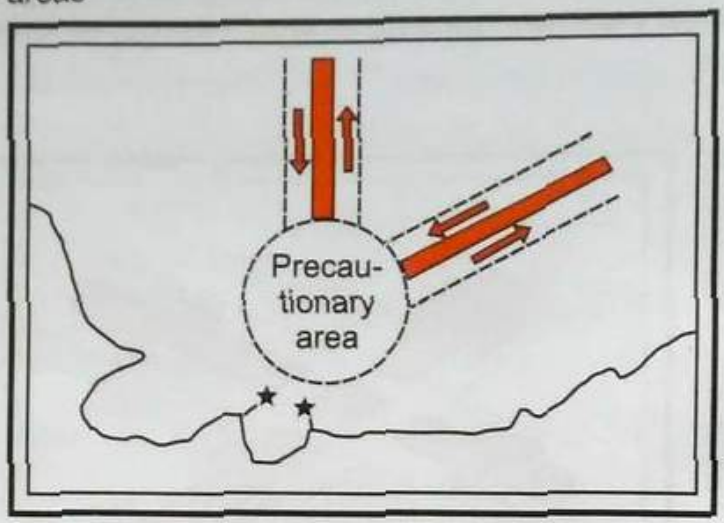



Fig. 8 Precautionary area at a focal point

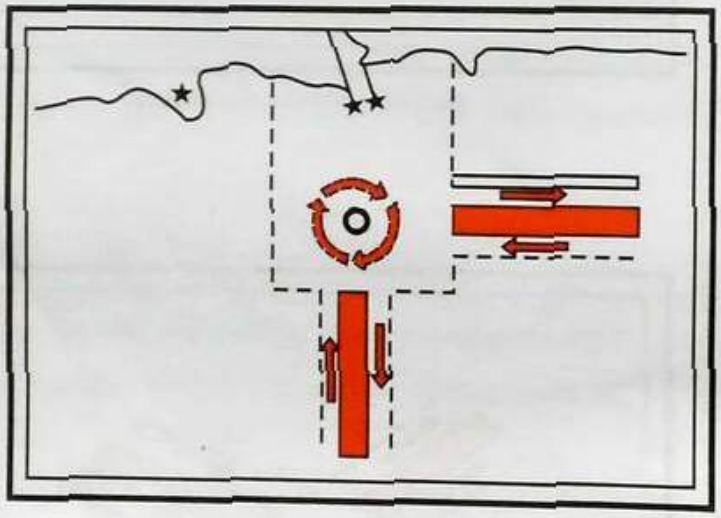


Fig. 9 Precautionary area with recommended direction of traffic flow around a focal point

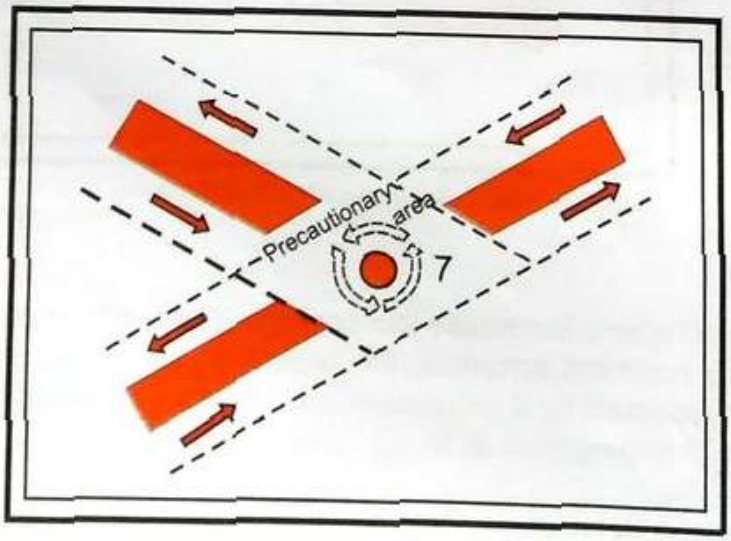



Fig. 10 Precautionary area at a route junction



Scanned by CamScanner

It may be best, when routes converge, to terminate them clear of their potential joining points and in such a case precautionary area can be instituted so as to emphasize the need for care in navigation. Figures 8 & 9 illustrate the use of such an area at focal points; a direction of traffic flow may be recommended (7) around the focal point as shown in Fig. 9.

Fig. 10 gives an example of how the same device can be used instead of a route junction. The traffic lanes are terminated short of the point of intersection and replaced by a precautionary area centred on that point, within which a counter-clockwise direction of traffic flow may be recommended (7).

Precautionary areas may also be used at the termination of any single route.

(f) Other routeing methods:

(i) deep water routes;

(ii) establishment of areas to be avoided;

(iii) two-way routes and recommended tracks through areas where navigation is difficult or dangerous.

## 5. PLANNING

5.1 Routeing systems should only be established when safety of navigation in the area can thereby be clearly improved.

5.2 The routeing system selected for a particular area should aim at providing safe passage for ships through the area without unduly restricting legitimate rights and practices, and taking account of anticipated or existing navigational hazards.

5.3 When planning, establishing, reviewing or adjusting a routeing system, the following factors shall be among those taken into account by a Government :

(a) their rights and practices in respect of the exploitation of living and mineral resources;

(b) previously established routeing systems in adjacent waters, whether or not under the proposing Governments jurisdiction;

(c) the existing traffic pattern in the area concerned, including coastal traffic, crossing traffic, naval exercise areas and anchorage areas;

(d) foreseeable changes in the traffic pattern resulting from port or offshore terminal developments;

(e) the presence of fishing grounds;

(f) existing activities and foreseeable developments of offshore or exploitation of the sea-bed;

(g) the adequacy of existing aids to navigation, hydrographic surveys and nautical charts of the area;

(h) environmental factors including prevailing weather conditions, tidal streams and currents and possibility of ice concentrations;



Scanned by CamScanner

(i) the existence of environmental conservation areas and the foreseeable developments in the establishments of such areas.

5.4 Routeing systems should be reviewed, re-surveyed and adjusted as necessary, so as to maintain their effectiveness and compatibility with trade patterns, offshore exploration resource exploitation, changes in depths of water, and other developments.

5.5 Routeing systems should not be established in areas where the instability of the sea-bed is such that frequent changes in the alignment and positions of the main channels, and thus of the routeing system itself, are likely.

5.6 When establishing areas to be avoided by all ships or by certain classes of ship, the necessity for creating such areas should be well demonstrated and the reasons stated. In general, these areas should be established only in places where inadequate survey or insufficient provision of aids to navigation may lead to danger of stranding, or where local knowledge is considered essential for safe passage, or where there is the possibility that unacceptable damage to the environment could result from a casualty, or where there might be hazard to a vital navigational aid. These areas shall not be regarded as prohibited areas unless specifically so stated; the classes of ships which should avoid the areas should be considered in each particular case.

## 6. DESIGN CRITERIA

6.1 The following standards should, so far as the circumstances allow, be applied in the design of ships' routeing measures. General

6.2 Routes should follow as closely as possible the existing patterns of traffic flow in the areas as determined by traffic surveys.

6.3 The configuration and length of routeing systems which are established to provide for an unobstructed passage through off-shore exploration and exploitation areas may differ from the dimensions of normally established systems if the purpose of safeguarding a clear passage warrants such a special feature.

6.4 Course alterations along a route should be as few as possible should be avoided in the approaches to convergence areas and route junctions or where crossing traffic may be expected to be heavy.

6.5 The number of convergence areas and route junctions should be kept to a minimum, and should be as widely separated from each other as possible. Adjacent traffic separation schemes should be placed such that nearly opposing streams of traffic in the adjacent schemes are separated as widely as possible. Route junctions should not be located where concentrated crossing traffic, not following established routes, may be expected, e.g. ferry traffic.

6.6 Routes should be designed to allow optimum use of aids to navigation in the area, and of such shipborne navigational aids as are required or recommended to be fitted by international conventions or by IMO resolutions and recommendations.

*Traffic separation schemes*

6.7 The extent of a traffic separation scheme should be limited to what is essential in the interests of safe navigation.



Scanned by CamScanner

6.8 Traffic lanes should be designed to make optimum use of availabe depths of water and the safe navigable areas taking into account the maximum depth of water attainable along the length of the route. The width of lanes should take account of the traffic density, the general usage of the area and of the sea-room available.

6.9 Where there is sufficient space, separation zones should be used in preference to separation lines to separate opposing streams of traffic and to segregate inshore traffic zones from adjacent traffic lanes.

6.10 It should be possible for ships to fix their position anywhere within the limits and in the immediate approaches to a traffic separation scheme by one or more of the following means, both by day and night :

(a) visual bearings of readily identifiable objects;

(b) radar bearing and ranges of readily identifiable objects;

(c) D/F bearings.

6.11 The minimum widths of traffic lanes and of traffic separation zones should be related to the accuracy of the available position-fixing methods, accepting the appropriate performance standards for shipborne equipment as set out in IMO resolutions and recommendations.

6.12 Where space allows the use of traffic separation zones the width of the zone should, if possible, be not less than three times the transverse component of the standard error (measured across the separation zone) of the most appropriate of the fixing methods listed in paragraph 6.10. Where necessary and practicable, additional separation should be provided so as to ensure that there will be adequate early indication that traffic proceeding in the opposite direction will pass on the correct side.

6.13 If there is doubt as to ships being able to fix their positions positively and without ambiguity in relation to separation lines or zones, serious consideration should be given to providing adequate marking by buoys.

*Converging and junction areas*

6.14 Whichever of the several available routeing methods is chosen for use at a route junction or in a converging area, it must be a cardinal principle that any ambiguity or possible source of confusion in the application of the Collision Regulations must be avoided. This principle should be particularly borne in mind when establishing or recommending the direction of traffic flow in such areas.

6.15 At route junctions the following particular considerations apply :

(a) the need to encourage the crossing of traffic lanes as nearly as possible at right angles;

(b) the need to give ships which may be required to give way under the Collision Regulations as much room to manoeuvre as possible;

(c) the need to enable a stand-on vessel to maintain a steady course, as required by the Collision Regulations, for as long as possible before the route junction;

(d) the need to encourage traffic not following an established route to avoid crossing at or near route junctions.



Scanned by CamScanner

*Deep water routes*

6.16 In designing deep water routes, consideration should be given to marking critical turning points. Any wrecks or seabed obstructions which lie within the limits of a deep water route and which have less depth of water over them than the minimum depth of water for the route as indicated on the charts, should be marked.

## 7. TEMPORARY ADJUSTMENTS TO TRAFFIC SEPARATION SCHEMES

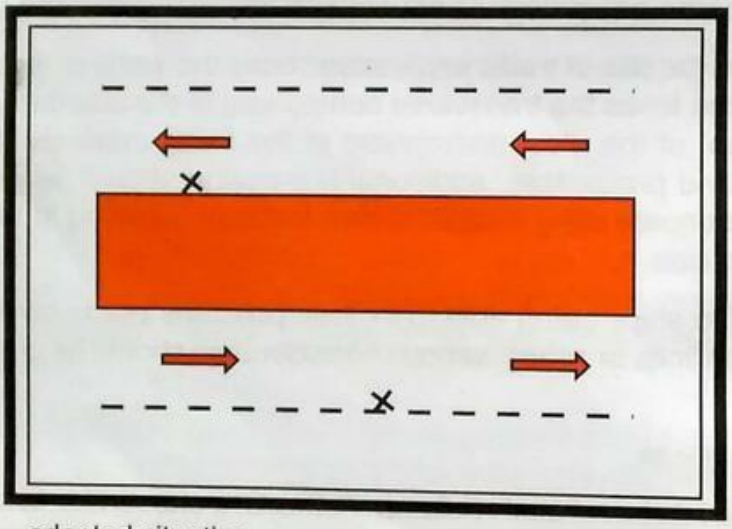
7.1 When the temporary positioning of an exploration rig is unavoidable the design criteria and the provisions for planning should be taken into account before permitting the positioning of the rig or subsequently adjusting a traffic separation scheme.

7.2 The said adjustments should be made in accordance with the following :

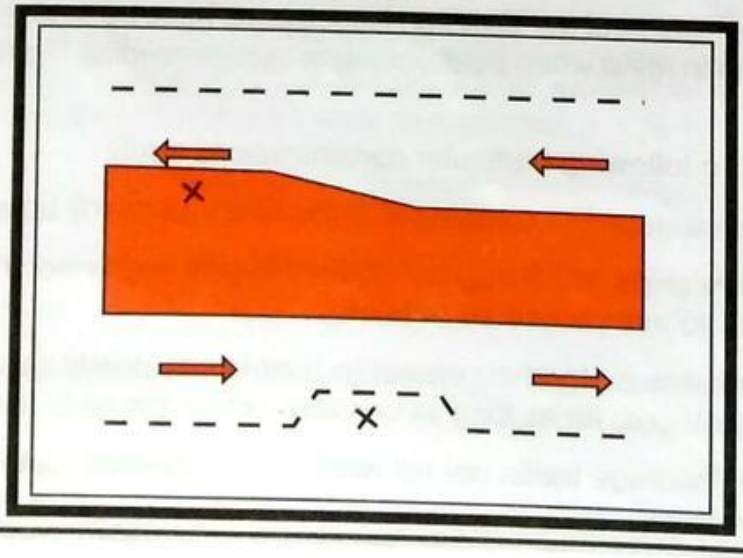
(a) When the drilling location is situated near the boundary of a lane or traffic separation zone, a relatively slight adjustment of the scheme could have such effect that the drilling rig and its associated safety zone is sufficiently clear of the traffic lane;

*Example*

original Situation



adapted situation



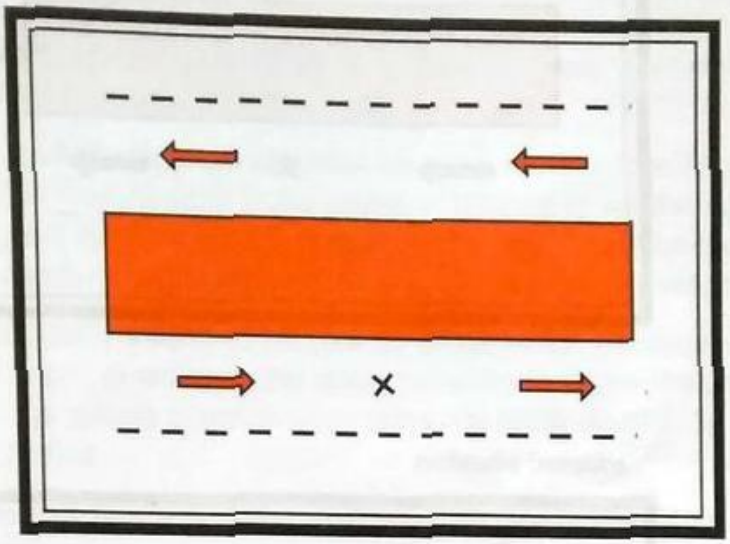


Scanned by CamScanner

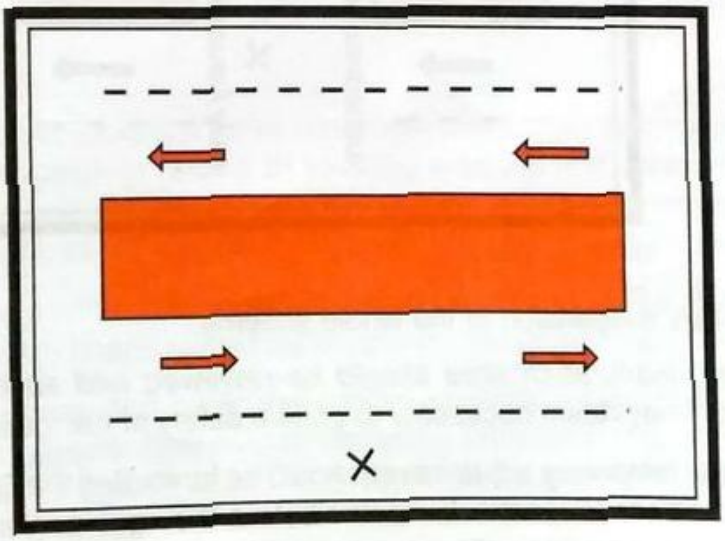
(b) if a small temporary adjustment of the traffic lane is not possible the whole or part of the scheme could be temporarily shifted in order to clear the drilling area from the lane so that traffic connected with the drilling operations will stay clear of the lane;

Example

original Situation



adapted situation

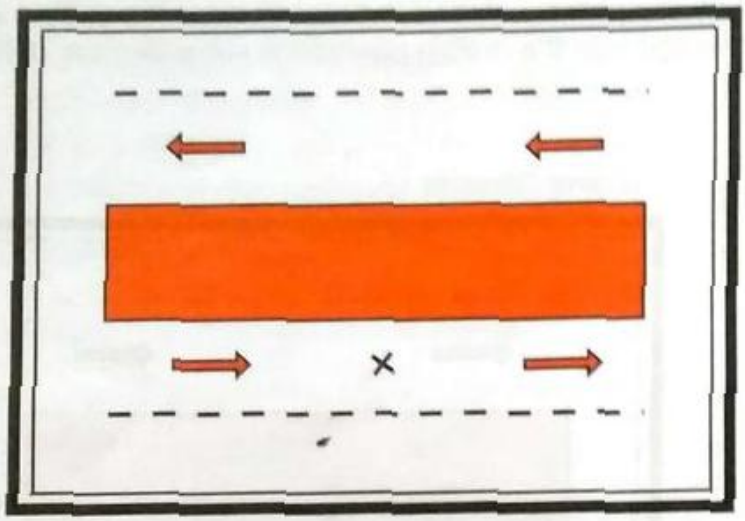


(c) temporary local interruption of the scheme or part of the scheme in the area of location of the drilling rig. Such an interruption could be made a precautionary area;

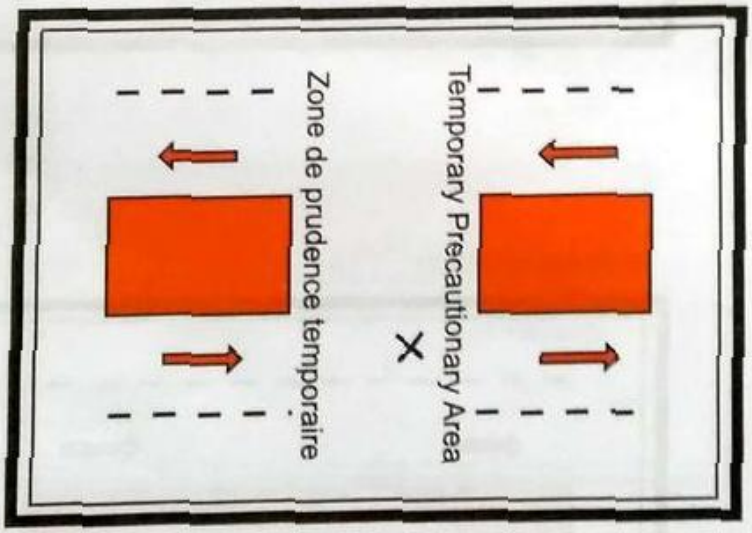


Scanned by CamScanner

original Situation



adapted situation




(d) temporary suspension of the whole scheme.

7.3 In each case, exploration sites should be reviewed and such conditions specified as the Administration may deem necessary to ensure safety of navigation in the area.

7.4 Details of these temporary adjustments should be forwarded the Organization and to appropriate hydrographic offices at least two months before the rig is positioned within an adopted traffic separation scheme so as to allow ample time for informing shipping.

## 8. THE USE OF ROUTEING SYSTEMS

8.1 Routeing systems are intended for use day and night in all weathers, in ice-free water or under light ice conditions where no extraordinary manoeuvres or assistance by ice breaker(s) are required.



Scanned by CamScanner

8.2 Routeing systems are recommended for use by all ships unless stated otherwise. Bearing in mind the need for adequate underkeel clearance, a decision to use a routeing system must take into account the charted depth, the possibility of changes in the sea-bed since the time of the last survey, and the effects of meteorological and tidal conditions on water depths.

8.3 A ship navigating in or near a traffic separation scheme adopted by the Organization shall in particular comply with Rule 10 of the International Regulations for preventing Collision at Sea, 1972 to minimize the development of risk of collision with another ship. The other rules of the 1972 Collision Regulations apply in all respects, and particularly the steering and sailing rules if risk of collision with another ship is deemed to exist.

8.4 At junction points where route traffic from various directions meet, a true separation of traffic is not really possible, as ships may need to cross routes or change to another route. Ships should therefore navigate with great caution in such areas and be aware that the mere fact that a ship is proceeding along a through-going route gives that ship no special privilege or right of way.

8.5 A deep water route is primarily intended for use by ships which because of their draught in relation to the available depth of water in the area concerned require the use of such a route. Through traffic to which the above consideration does not apply should, as far as practicable, avoid using deep water routes.

8.6 In two-way routes, including two-way deep water routes, ships should as far as practicable keep to the starboard side.

8.7 Arrows printed on charts in connection with routeing systems merely indicate the general direction of established or recommended traffic flow; ships need not set their courses strictly along the arrows.

8.8. The signal 'YG' meaning "You appear not to be complying with the traffic separations scheme" is provided in the International Code of Signals for appropriate use.

## 9. SYMBOLS

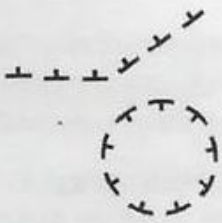
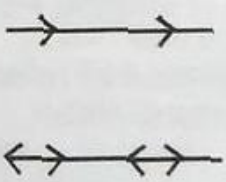
9.1 The symbols in the following table are those recommended by the International Hydrographic Organization for representation of details of routeing systems and associated measures on nautical charts. They are included for information on what may be generally found on charts. Individual countries may, however, use on their charts symbols differing from next page.

9.2 The International Hydrographic Organisation has recommended that routeing and traffic separation symbols used on charts should be printed in colour, preferably magenta.

9.3 Secondary details of routeing and traffic separation, such as figures indicating directions of traffic, schemes and their details, dimensions, distances from coast, etc., should not be shown on charts unless considered critical. These may, however, be given in Sailing Directions, if so decided by hydrographic offices.



Scanned by CamScanner

| Detail (The figures in brackets refer to the Remarks) | Presentation | Description |
|---|---|---|
| 1. Outside boundary of traffic lanes and twoway routes |  | Dashed line the symbol used for maritime limits in general |
| 2. Separation zone (1) (of any shape) (2) | | A zone indicated by a tint light enough to reveal any hydrographic details |
| 3. Separation line (2) | | A tinted line at least 3 mm wide* |
| 4. Outside boundary of roundabout or precautionary area (3) | | Dashed line the symbol used for maritime limits in general |
| 5. Centre of a round- about which contains no central zone | | A firm-line circle of at least 3 mm in diameter |
| 6. Arrows indicating established direction of traffic flow (4) | | Open-outlined arrows so situated and shaped as to indicate general direction of raffic flow |
| 7. Arrows indicating the recommended direction of traffic flow (certain stipulated classes of ships may be exempt) (4) | | Dashed open-outlined arrows so situated and shaped as to indicate general recommended direction of traffic flow |
| 8. Boundary of areas to be avoided (5) (6) |  | A line composed of a series of T-shaped signs, the cross bar of the T being long and the down stroke short and pointing towards the area in estion, within which a suitable legend may be inscribed. |
| 9. Recommended track when based on a system of fixed marks (7) |  | A single continuous line in black or colour in which arrowheads are inserted at regular intervals either singly to represent a neway track, or in opposing pairs to represent a twoway track |



Scanned by CamScanner

| Detail (The figures in brackets refer to the Remarks) | Presentation | Description |
|---|---|---|
| 10. Recommended track when not based on a system of fixed marks (7) | | A single dashed line, in black or colour, in which arrowheads are inserted at regular intervals either singly to represent a neway track, or in opposing pairs to represent a woway track |
| 11. Outside boundary of deep water route |  | Dashed line-the symbol used for maritime limits in general |
| 12. Deep water route with both outside boundaries depicted | | Dashed lines and the abbrevation DW inserted at regular intervals between them |
| 13. Deep water route, based on fixed marks (8) (9) | | A single continuous line in which arrowheads are inserted at regular intervals, either singly to represent a one-way route, or in opposing pairs, to epresent a twoway route. The abbrevation DW is inserted at regular intervals along the continuous line |
| 14. Deep water route not ased on fixed marks (8) (9) | | A single dashed line in hich arrowheads are inserted at regular intervals, either singly to represent a oneway route or in opposing pairs to represent a tworoute. The abbrevation DW is inserted at regular intervals along the ashed line |

## Remarks

(1) If the traffic lanes are separated by natural features (islands, marked shoals, etc.) representation of the separation zone may be omitted.

(2) Used also to mark the boundary between a traffic lane and an adjoining inshore traffic zone.

(3) The dashed line representing the outside boundary of a roundabout should be broken at the junctions between the traffic lanes and the roundabout. This may also be done for precautionary areas if considered appropriate.

(4) It is preferable that the arrows be inserted in dispersed or staggered formation, instead of placing them in straight lines.

(5) Notes on conditions of avoidance (classes and sizes of ships, nature of cargoes carried, etc.) may be given on charts and should always be given in Sailing Directions.

(6) This symbol is also used to indicate the boundary of offshore exploration and exploitation areas where navigation may be dangerous.

(7) A usual feature of recommended tracks is that they occur fairly close inshore and are intended primarily to help ships aviod shoal depths, rather than to regulate shipping movements. In such cases, they are usually charted in black.



Scanned by CamScanner

(8) When the minimum depth along a DW route is considered critical, the depth may be indicated beside the abbrevation DW. However, unless the critical depths within the limits of the DW route are regularly examined and confirmed by a competent harbour, regional or national authority, it is unlikely that such a minimum depth can be quoted on the chart. The least depths obtained during the survey investigation of the DW route will be apparent by the display of selected soundings shown on the chart in the usual manner. In some cases, a

NOTE on the chart gives further information regarding date of survey, etc.

(9) The symbols 13 and 14 in the table above are identical to those for Recommended Tracks (see symbols 9 & 10) with the addition of abbrevation DW. Particularly on a two-route, deep draught vessels will rarely be able adhere strictly to a single centre line and, for this reason, it is preferable that a DW route be shown on charts by symbol 12 which clearly indicates the extent of the area which has been accurately surveyed for clearance of sea bottom and submerged objects.



Scanned by CamScanner

## TRAFFIC SEPARATION SCHEMES – A SYNOPSIS

1. Traffic separation schemes are in use in areas where there is heavy traffic and also off head lands where there is heavy two way traffic. The purpose of traffic separation scheme is to separate the ships moving in opposite direction so that there is no collision. Since ships moving in the same direction keep to one lane, their relative speed of approach to each other is not large and there is therefore less likelihood of collision between ships.

2. Traffic separation scheme is meant for use both in day and night and in all weathers but only in ice free and light ice conditions.

3. Use of traffic separation scheme is not mandatory. It is only recommended. A vessel may keep out of a traffic separation scheme but if going opposite to traffic flow in the adjacent lane of T.S.S. it should keep off by a wide margin (Rule 10). Further, if by avoiding to use a traffic separation scheme, she encroaches into inshore traffic zone in violation of Rule 10, she should use the traffic separation scheme. Only in case of very rough weather she would be justified in using inshore traffic zone.

4. Traffic separation schemes are marked on the chart in magenta colour but so light that other details of the chart are visible. The outer boundaries of the traffic separation scheme are marked by dashes. Traffic separation lines or traffic separation zones separate the adjacent and opposite traffic lanes in which ships are required to move in opposite directions. Staggered arrows are marked in the lanes to show the established or recommended direction of traffic flow. These arrows merely indicate the direction. Ships need not set their courses strictly along the arrows.

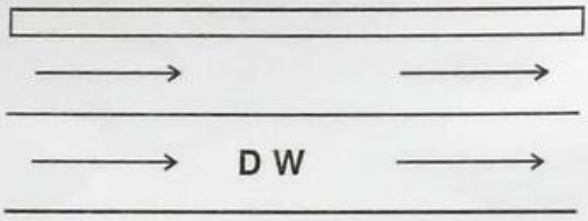
5. Routes are marked by arrows either singly → → represent a one way track or in opposing pairs ↔ ↔ to represent a two way track. Continuous lines → → are used for the arrows when track is based on a system of fixed marks. Dashed line ·→ ·→·· is used when track is not based on fixed marks.



Scanned by CamScanner

6. Outside boundaries of routes, precautionary areas and roundabouts are marked by dashed lines ----------

7. Deep water routes are meant for use by vessel constrained by draft, which are showing the required lights and shapes. Vessels which can safely navigate outside the deep water routes should not use there routes. Sometimes deep water lane may run by the side of normal traffic lane. The letters DW are marked on deep water lanes.




8. Precautionary Area "is an area where ships must navigate with particular caution and within which direction of traffic flow may be recommended. Precautionary Area are normally marked at route junctions, or route crossings near termination of two or more routes converging near a port.

9. The region between the landward boundary of a lane of traffic separation scheme and the coast is called "Inshore traffic zone". It also is separated from the traffic lane by separation line or zone. Inshore traffic zones are meant to keep coastal shipping clear of through traffic. Local special rules may apply in Inshore traffic zones. Hence it is not to be used by through traffic except for entering or leaving a harbour and for picking up pilot. However vessel of less than 20 m in length and sailing vessels may use Inshore traffic zones at all times, even when they are through traffic [Rule 10(d)].

10. Traffic separation zones or traffic separation lines are not necessarily marked by buoys. Zones are preferable to buoys. Ships are not allowed to enter a traffic separation zone except when

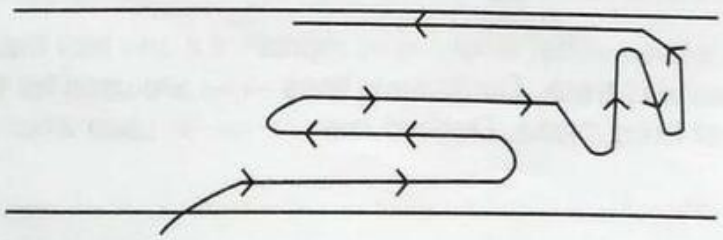
(a) Crossing a lane

(b) Entering or leaving a lane

(c) Engaged in fishing

(d) There is an emergency.

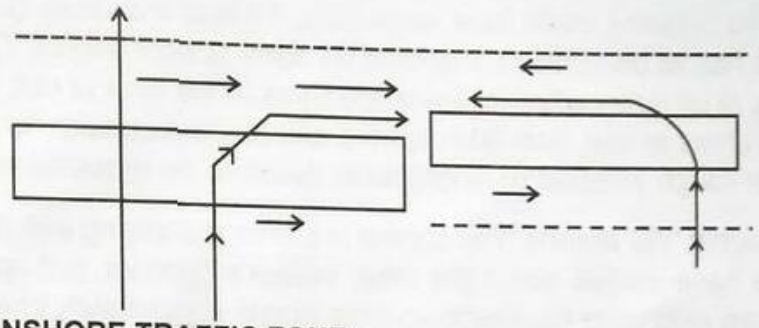
There is no established direction of traffic in a T.S. zone. For example fishing vessel may move in any direction in the zone but it is better that near the boundaries of separation zone, fishing vessel should *move along the direction of traffic in the adjacent traffic lane.*





Scanned by CamScanner

Vessels crossing separation zones and/or traffic lanes should do so as nearly as practicable at right angles. However vessels crossing a separation zone to join the traffic lane may not do so. Traffic separation schemes (contd.)

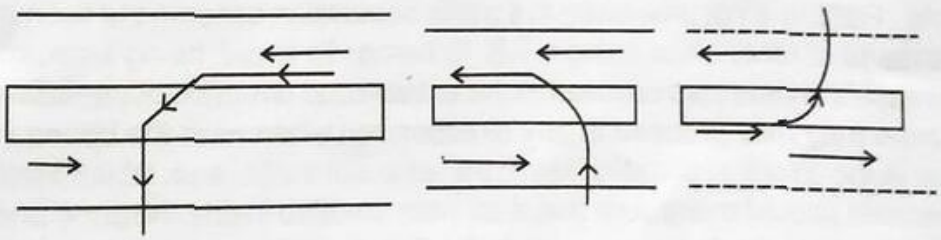


INSHORE TRAFFIC ZONE

## CONDUCT OF VESSELS

1. A vessel should keep to Stbd. side of a two way traffic separation scheme i.e. along the arrows marking the direction of traffic flow in a lane : Rule 10(b)(i).

2. Leave or join a traffic lane at the terminations but if it is necessary to join or leave from the side, it should be done at a very small angle [Rule 9(b)(iii)]. In long distance T.S.S. if a Port is midway, it may not be possible for ships going to or leaving from that port to enter or leave the Traffic lane at the termination. But there is no justification for not doing so for short length T.S.S. such as, off a headland.



3. Vessels crossing a lane and then joining the opposite lane should also join the opposite line at a very small angle. Similarly vessels leaving a lane and then crossing, should leave at a very small angle.

4. Ships using a T.S.S. should as far as practicable keep clear of a traffic separation line or separation zone except when (i) crossing a lane (ii) entering or leaving a lane or (iii) in emergency. Traffic separation lines or zones may not be marked by buoys. Therefore to avoid getting in the wrong lane, plot your course well clear of the separation line or zone. This applies to separation lines or zones between a through traffic lane and Inshore traffic zone also.

5. If in order to get out of a lane, a ship has to move from one side of a traffic lane to the other side, she should do so at a very small angle.

6. A traffic separation scheme reduces the speed of approach of vessels in the same traffic lane. Therefore a vessel at anchor, or stopped and underway, in a traffic lane is a source of danger to



Scanned by CamScanner

other vessels using that lane, especially in bad visibility. The wind or tide direction may cause a vessel at anchor to lie, at right angle to traffic flow. Therefore a vessel should never anchor in a traffic lane, traffic separation zone or near the terminations of traffic lanes.

7. Vessels should avoid crossing traffic lane, especially, if it is of a short length. But if a traffic lane or Separation Zone has to be crossed, it should be done at right angles. Obligation to cross at right angles applies at all times whether there are ships in the lane or not. However, ships may have to sometimes cross at less than 90 in special circumstances such as a need to keep clear of another vessel or rough weather or wrong wind direction for crossing sailing vessels.

8. International code signal 'YG' means "You appear not to be complying with the Traffic Separation Scheme". So if you have doubts about the other vessel's conduct, put up or flash this signal. And if the other vessel puts up or flashes to you this signal, immediately check your position and course and take appropriate action.

9. Cable laying ships, cable servicing ships, vessel engaged in laying or picking up navigation marks and survey ships are regarded as "Restricted in their ability to manouvre". But they should also try to follow traffic lanes. If they have to cross they should do so at right angles. However, when in course of their work, they are unable to follow Rule 10 for Traffic Separation Scheme entirely, they are exempted to the extent necessary to carry out their work i.e. at such times, they may go against traffic flow, anchor, enter separation zone, not cross at right angles etc. However, information about such vessels shall be promulgated beforehand by Notices to Mariners or Radio warnings. In bad visibility such operations shall be avoided.

## FISHING VESSELS

Fishing Vessels : Fishing is not prohibited in a traffic separation scheme but fishing vessels should not impede the passage of other ships using a T.S. Scheme. To avoid, being a source of danger to other ships, fishing vessels should also proceed in the established direction of traffic flow in a traffic lane. In a separation zone they may proceed in any direction but when near the boundary of the zone, they should proceed in the direction of traffic flow in the adjacent traffic lane. When fishing in the separation zone fishing vessels should make sure that their nets are also inside the zone and do not extend into a traffic lane. Similarly, vessels fishing outside the T.S. Scheme should not let their nets extend into traffic lanes.

Fishing vessels are not obliged to avoid impeding the safe passage of Power Driven Vessels crossing a traffic lane or separation zone or moving against the direction of flow.

## R.O.R. IN A T.S.S.

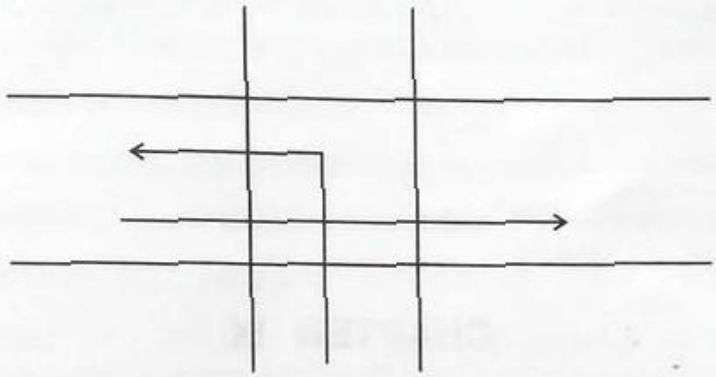
1. If in a Traffic Separation Scheme, risk of collision between two vessels develops, normal steering and sailing Rules will apply. For example although small vessels (< 20 m) and sailing vessels have a general obligation to avoid impeding the safe passage of a power driven vessel following a traffic lane [Rule 9(b)], if they don't and risk of collision develops, normal steering and Sailing Rules (Part B) will apply. Similarly, vessels should cross a traffic lane in such a way as not to impede the passage of vessel following a traffic lane, but if risk of collision develops between a



Scanned by CamScanner

crossing vessel and a vessel following a traffic lane, Rule 15 will apply.

2. Fishing vessels of less than 20 m length and sailing vessels are not obliged to avoid impeding the safe passage of a power driven vessel crossing a lane or zone or moving against the traffic direction.



3. At junction of two lanes, normal steering and sailing Rules apply. No special privilege has been given to a ship which keeps going straight over a vessel which is changing a lane.

4. Lane Termination : Traffic Separation Schemes have increased the chances of collision near the lane terminations due to increased density of ships, converging to get into the lane and diverging after getting out of a lane. Utmost caution is therefore necessary when navigating near terminations, specially in bad visibility.



Scanned by CamScanner

# CHAPTER IX

## INTERNATIONAL ASSOCIATION OF LIGHTHOUSE AUTHORITIES MARITIME BUOYAGE SYSTEM

### HISTORICAL BACKGROUND

As recently as 1976 there were more than thirty different buoyage systems in use world wide, many of these systems having rules in complete conflict with one another. This resulted in a situation particularly confusing at night when a mariner could be unexpectedly confronted by a light, the meaning of which was not clear. Such confusion was especially dangerous when the unidentified light was marking a new and as yet uncharted danger, such as a recent wreck. This left the mariner in doubt as to his proper course of action leading him to make a wrong and perhaps disastrous decision.

There has always been disagreement over the way in which buoy lights should be used since they first appeared towards the end of the 19th century. In particular, some countries favoured using red lights to mark the port hand side of channels and others favoured them for marking the starboard hand.

Another major difference of opinion revolved around the principles to be applied when laying out marks to assist the mariner. Most countries adopted the principle of the Lateral system whereby marks indicate the port and starboard sides of the route to be followed according to some agreed direction. However, several countries also favoured using the principle of Cardinal marks whereby dangers are marked by one or more buoys or beacons laid out in the quadrants of the compass to indicate where the danger lies in relation to the mark, this system being particularly useful in the open sea where the Lateral buoyage direction may not be readily apparent.

Over the years, many attempts were made to solve these differences of opinion but without success. The nearest approach to international agreement on a unified system of buoyage was reached at Geneva in 1936. Unfortunately, this Agreement, drawn up under the auspices of the League of Nations, was never ratified due to the outbreak of World War II. The Agreement proposed the use of either Cardinal marks or Lateral marks but separated them into two different systems. It also provided for the use of the colour red on port hand marks and largely reserved the colour green for wreck marking.

At the end of World War II many countries found their aids to navigation destroyed and the process of



Scanned by CamScanner

rehabilitation had to be undertaken urgently. In the absence of anything better, the Geneva rules were adopted with or without variation to suit local conditions and the equipment available. This led to wide and sometimes conflicting differences particularly in the crowded waters of North Western Europe.

Much of the North and South American continents and some countries of the pacific continued to favour "red to starboard" and used only a Lateral system of buoyage.

The whole unsatisfactory situation was well known to IALA, and as long ago as 1965, the Association set up an International Technical Committee to examine the problem and to suggest a solution.

There were three basic problems facing the Committee :

(i) the need to retain existing equipment as far as possible to avoid undue expense.

(ii) how were the colours green and red to be used when marking channels?

(iii) the need to combine the Lateral and cardinal rules.

Attempts to bring complete unity had little success. Fresh impetus was given to the task of the Committee by a series of disastrous wrecks in the Dover Strait area in 1971. These wrecks, situated in one lane of a traffic separation scheme, defied all attempts to mark them in a way all could readily understand.

To meet the conflicting requirements, it was thought necessary as a first step to formulate two systems, one using the colour red to mark the port hand side of channels and the other using the colour red to mark the starboard hand side of channels. These were called System A and System B respectively.

The rules for System A which included both cardinal and lateral marks were completed in 1976 and agreed by the Inter- Governmental Maritime Consultative Organization (IMCO). The introduction of the System began in 1977 and its use has gradually spread throughout Europe, Australia, New Zealand, Africa, the Gulf and some Asian countries.

The rules for System B were completed in early 1980 and these were felt to be suitable for application in the countries of North, Central and South America, Japan, Korea and the Philippines.

The rules for the two Systems were so similar that the IALA Executive Committee felt able to combine the 2 sets of rules into one, known as "The IALA Maritime Buoyage System". This single set of rules allows Lighthouse Authorities the choice of using red to port, or red to starboard, on a regional basis, the two regions being known as Region A and Region B.

To achieve this single set of rules and to meet the needs of Region B countries, it was proposed to make certain small additions to the agreed System A rules. These additions were of minor nature and did not make any significant change to the System A buoyage already in course of introduction.

At a conference convened by IALA in November 1980 with the assistance of IMCO and the International Hydrographic Organization (IHO), the Lighthouse Authorities from 50 countries and the representatives of 9 International Organizations concerned with aids to navigation met, and agreed to adopt the rules of the new combined System. The boundaries of the buoyage regions were also decided and illustrated on the map annexed to the rules. The Conference also underlined the need for cooperation between neighbouring countries and with Hydrographic Services in the introduction of the new System.

Thus the IALA Maritime Buoyage System will, for the first time, help the Mariner of any nationality to fix his position and avoid dangers without fear of ambiguity. This is indeed an important and positive contribution to safety of life and property at sea.



Scanned by CamScanner

## GENERAL PRINCIPLES OF THE SYSTEM

Within the IALA Buoyage System there are 5 types of marks which may be used in combination. The mariner can easily distinguish between these marks by readily identifiable characteristics. General principles

Lateral marks differ between Buoyage Regions A and B as described below, whereas the other 4 types of marks are common to both regions.

### LATERAL MARKS

Following the sense of a 'conventional direction of buoyage', Lateral Marks in Region A utilize red and green colours by day and night to denote the port and starboard sides of channels respectively. However, in Region B these colours are reversed with red to starboard and green to port.

A modified Lateral Mark may be used at the point where a channel divides to distinguish the preferred channel, that is to say the primary route or channel which is so designated by an Authority.

### CARDINAL MARKS

Cardinal Marks indicate that the deepest water in the area lies to the named side of the mark. This convention is necessary even though for example, a North mark may have navigable water not only to the North but also East and West of it. The mariner will know he is safe to the North, but must consult his chart for further guidance.

Cardinal Marks do not have a distinctive shape but are normally pillar or spar. They are always painted in yellow and black horizontal bands and their distinctive double cone top-marks are always black.

An aide-memoire to their colouring is provided by regarding the topmarks as pointers to the positions of the black band(s) :

Topmarks pointing upward: black band above yellow band

Topmarks pointing downward : black band below yellow band

Topmarks pointing away from each other : black bands above and below a yellow band

Topmarks pointing towards each other : black band with yellow bands above and below.

Cardinal marks also have a special system of flashing white lights. The rhythms are basically all "very quick" (VQ) or "quick" (Q) flashing but broken into varying lengths of the flashing phase. "Very quick flashing" is defined as a light flashing at a rate of either 120 or 100 flashes per minute, "quick flashing" is a light flashing at either 60 or 50 flashes per minute.

*The characters used for Cardinal Marks will be seen to be as follows :*

**North** : Continuous very quick flashing or quick flashing

**East** : Three "Very quick" or "quick" flashes followed by darkness

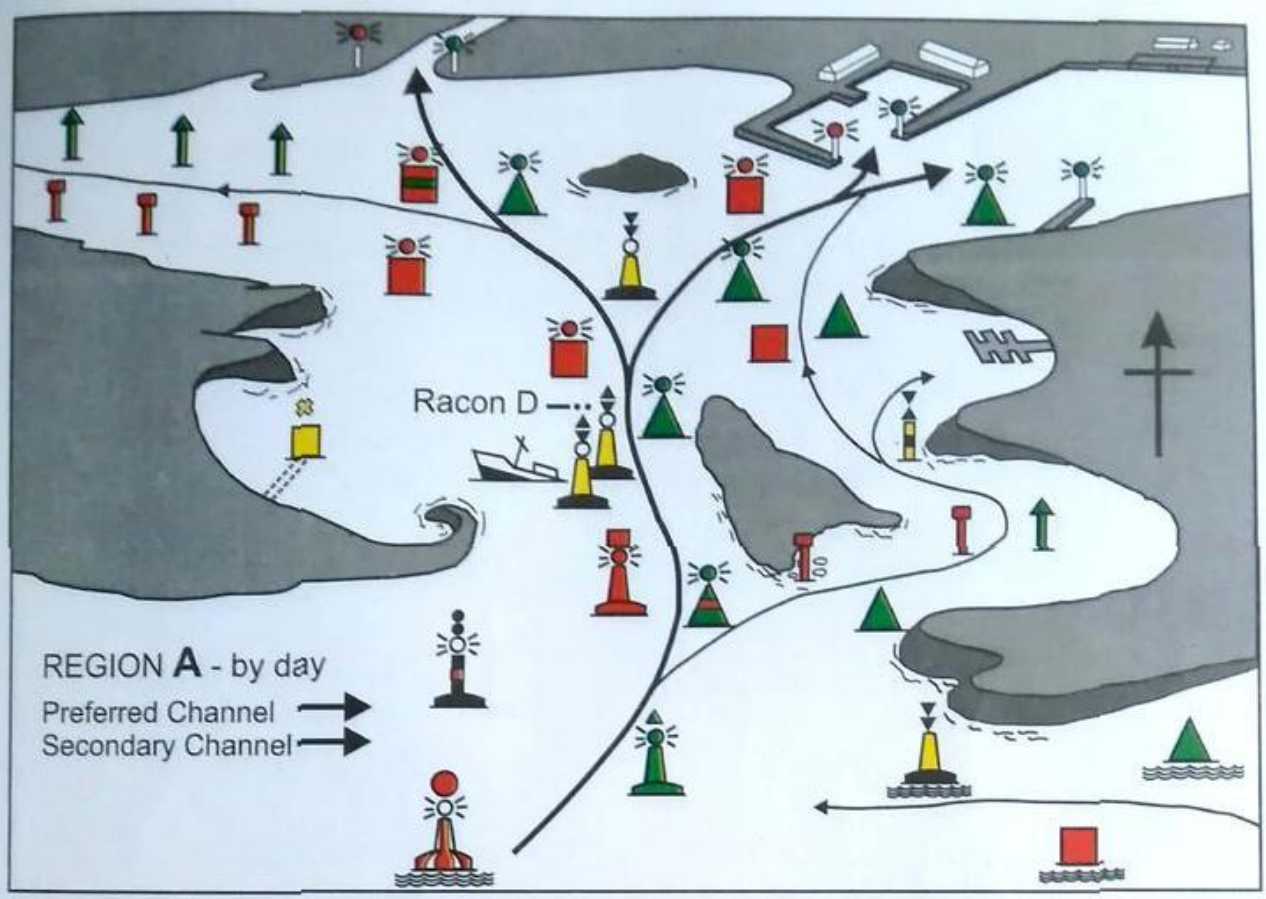
**South** : Six "very quick" or "quick" flashes followed immediately by a long flash, then darkness

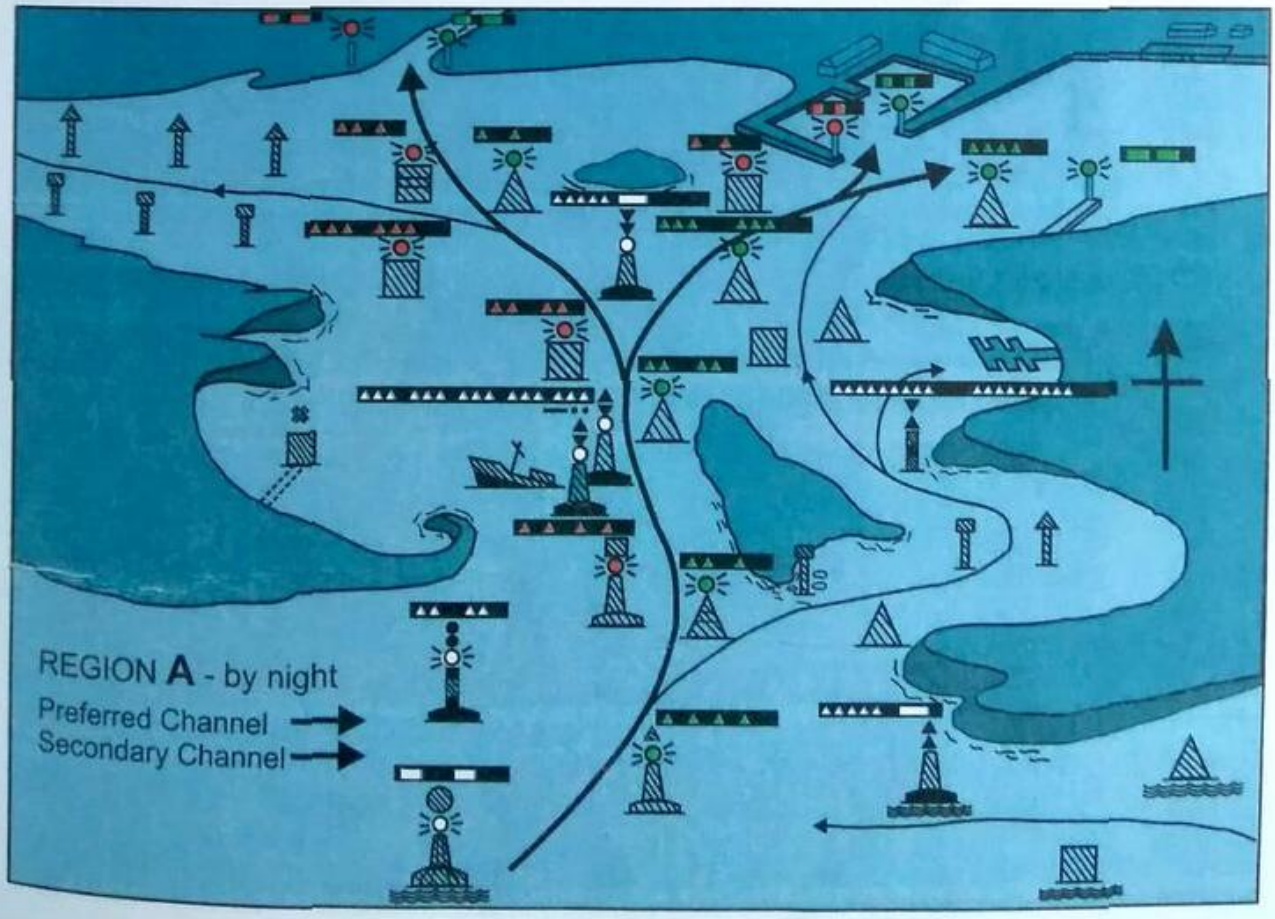
**West** : Nine "very quick" or "quick" flashes followed by darkness.

The concept of three, six, nine is easily remembered when one associates it with a clock face. The

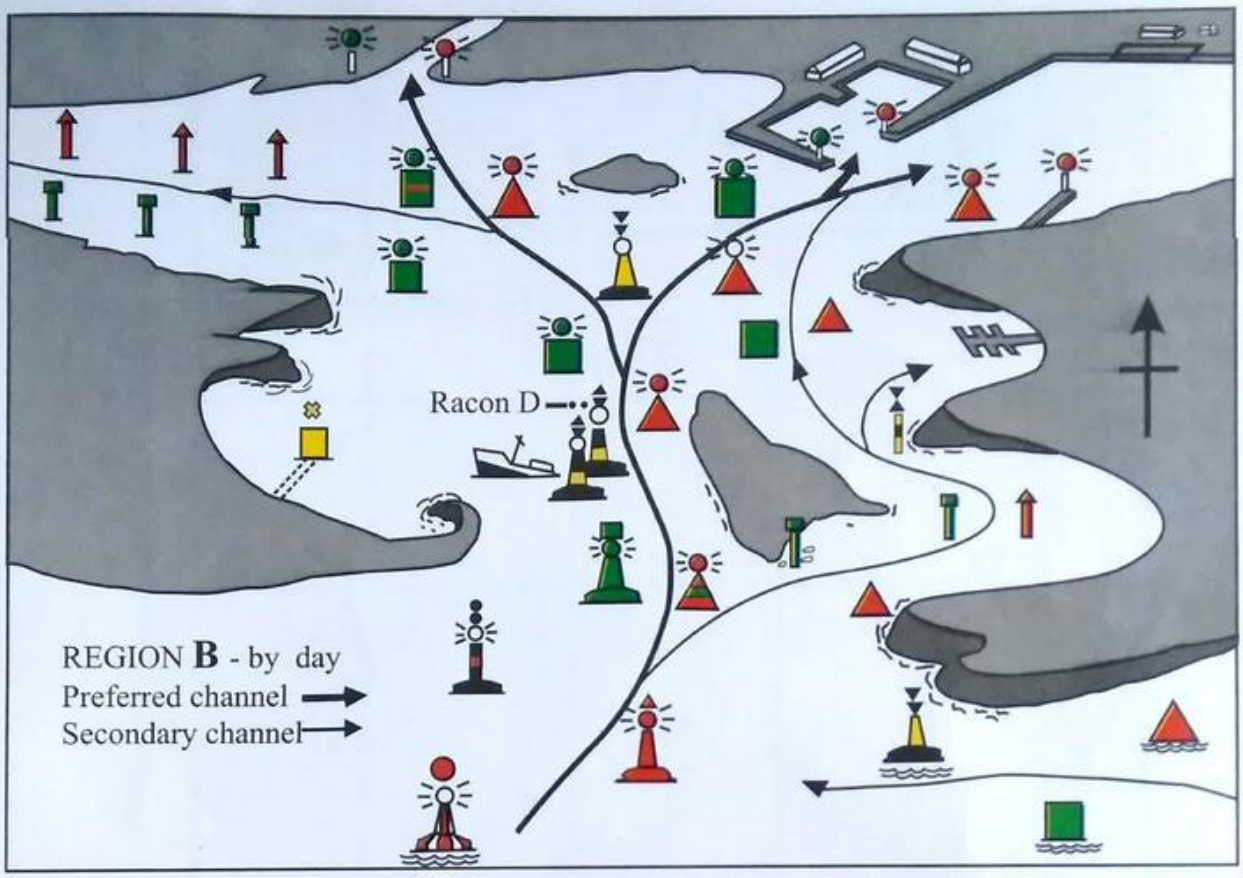


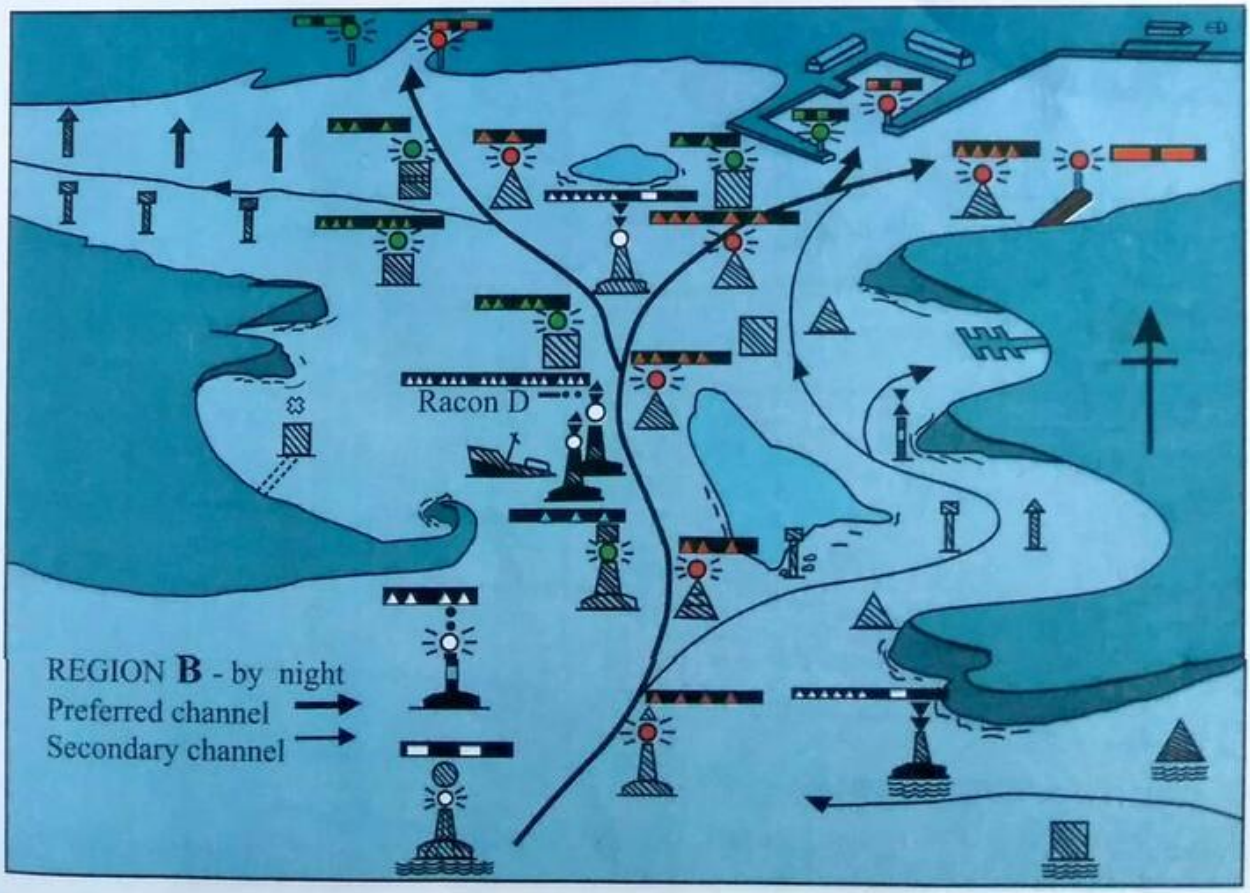
Scanned by CamScanner



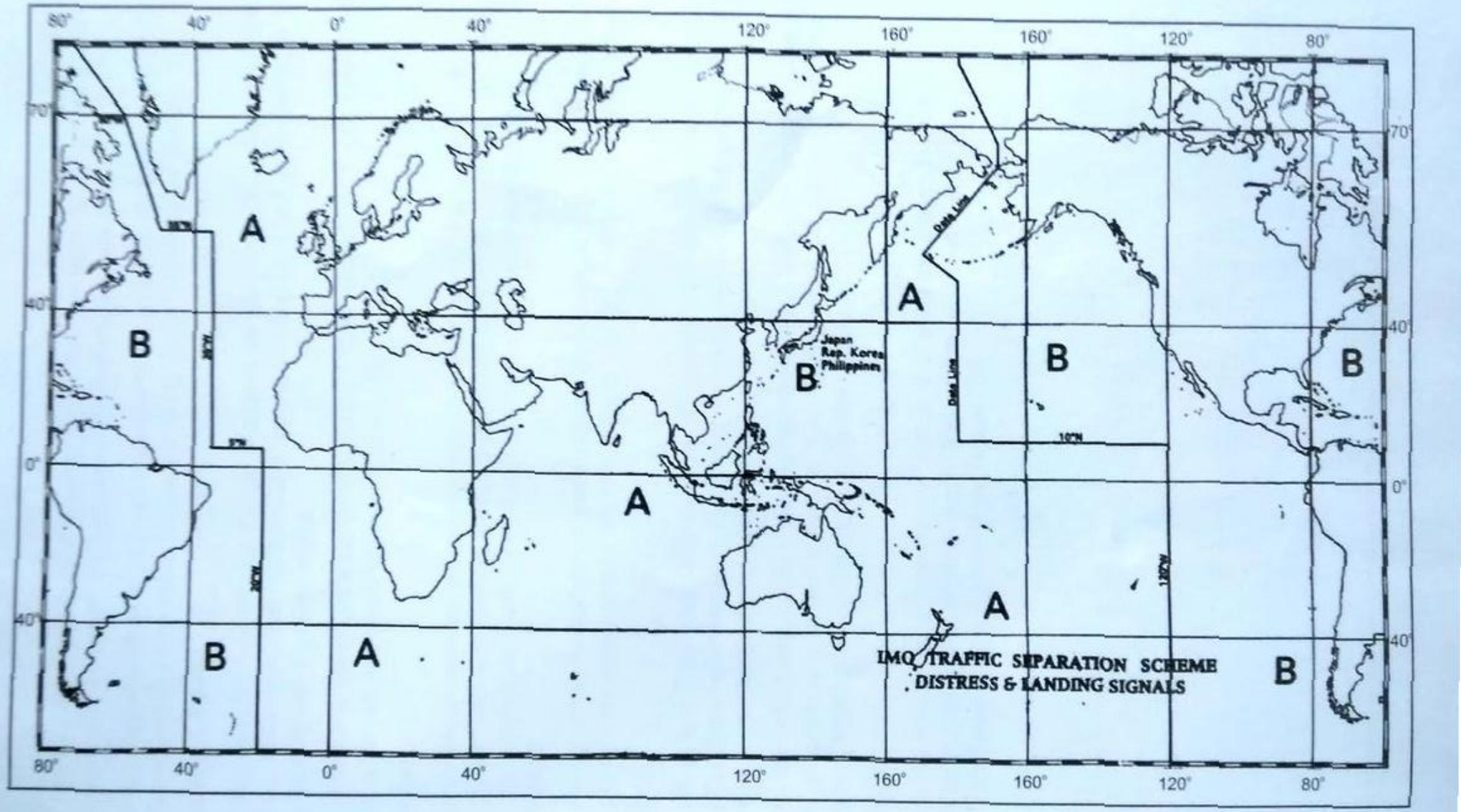




Scanned by CamScanner




Scanned by CamScanner




Scanned by CamScanner

long flash, defined as a light appearance of not less than 2 seconds, is merely a device to ensure that three or nine "very quick" or "quick" flashes cannot be mistaken for six.

It will be observed that two other marks use white lights. Each has a distinctive light rhythm which cannot be confused with the very quick or quick flashing light of the Cardinal Marks.

## ISOLATED DANGER MARK

The Isolated Danger Mark is placed on a danger of small area which has navigable water all around it. Distinctive double black spherical topmarks and Group flashing (2) white lights, serve to associate Isolated Danger Marks with Cardinal Marks.

The Safe Water Mark has navigable water all around it but does not Mark a danger. Safe Water Marks can be used, for example, as mid-channel or landfall Marks.

## SAFE WATER MARKS

Safe Water Marks have an appearance quite different from danger marking buoys. They are spherical, or alternatively pillar or spar with a single red spherical topmark. They are the only type of Mark to have vertical stripes (red and white). Their lights, if any, are white using isophase, occulting, one long flash or Morse "A" rhythms.

Special Marks are not primarily intended to assist navigation but are used to indicate a special area or feature whose nature may be apparent from reference to a chart or other nautical document.

## SPECIAL MARKS

Special Marks are yellow. They may carry a yellow "X" topmark, and any light used is also yellow. To avoid the possibility of confusion between yellow and white in poor visibility, the yellow lights of Special Marks do not have any of the rhythms used for white lights.

Their shape will not conflict with that of navigational Marks, this means, for example, that a special buoy located on the port hand side of a channel may be cylindrical, but will not be conical. Special Marks may also be lettered or numbered to indicate their purpose.

## NEW DANGERS

It should be specially noted that a "new danger" which is one not yet shown in nautical documents, may be indicated by exactly duplicating the normal Mark until the information is sufficiently promulgated. A "new danger" Mark may carry a Racon coded Morse "D".



Scanned by CamScanner

## MARITIME BUOYAGE SYSTEM RULES

### 1. GENERAL

#### 1.1. Scope

This system provides rules which apply to all fixed and floating marks (other than lighthouses, sector lights, leading lights and marks, lightships and large navigational buoys) serving to indicate :

1.1.1. The lateral limits of navigable channels.

1.1.2. Natural dangers and other obstructions such as wrecks.

1.1.3. Other areas or features of importance to the mariner.

1.1.4. New dangers.

#### 1.2. Types of marks

The system of buoyage provides five types of marks which may be used in combination:

1.2.1. Lateral marks, used in conjunction with a "conventional direction of buoyage", generally used for well defined channels. These Marks indicate the port and starboard sides of the route to be followed. Where a channel divides, a modified lateral Mark may be used to indicate the preferred route. Lateral Marks differ between Buoyage Regions A and B as described in Sections 2 and 8.

1.2.2. Cardinal Marks, used in conjunction with the mariner's compass, to indicate where the mariner may find navigable water.

1.2.3. Isolated Danger Marks to indicate isolated dangers of limited size that have navigable water all round them.

1.2.4. Safe Water Marks to indicate that there is navigable water all round their position, e.g. mid-channel Marks.

1.2.5. Special Marks not primarily intended to assist navigation but to indicate an area or feature referred to in nautical documents.

1.3. Method of characterising Marks The significance of the Mark depends upon one or more of the following features :

1.3.1. By night, colour and rhythm of light.

1.3.2. By day, colour, shape, topmark.

### 2. LATERAL MARKS

#### 2.1. Definition of "conventional direction of buoyage"

The "conventional direction of buoyage", which must be indicated in appropriate nautical documents, may be either :

2.1.1. The general direction taken by the mariner when approaching a harbour, river, estuary or other waterway from seaward, or



Scanned by CamScanner

2.1.2. The direction determined by the proper authority in consultation, where appropriate, with neighbouring countries. In principle it should follow a clockwise direction around land masses.

## 2.2. Buoyage Regions

There are two International Buoyage Regions A and B where lateral marks differ. These buoyage regions are indicated in Section 8.

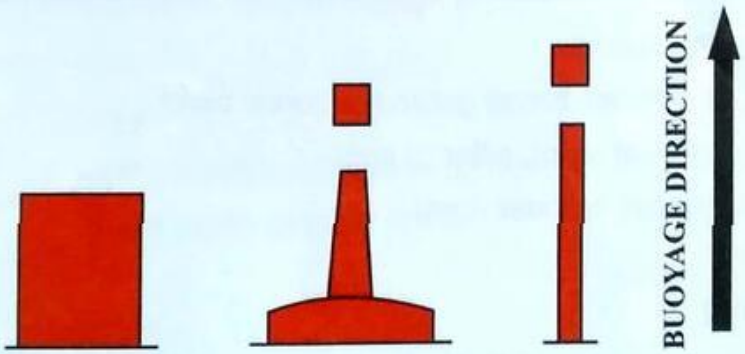
## 2.3. Description of Lateral Marks used in Region A

2.3.1. Port hand Marks

| | | |
|---|---|---|
| Colour | : | Red |
| Shape (Buoys) | : | Cylindrical (can), pillar or spar |
| Topmark (if any) | : | Single red cylinder (can) |
| Light (when fitted) | : | |
| Colour | : | Red |
| Rhythm | : | Any, other than that described in section 2.3.3. |

Starboard hand Marks

Fig. 2.3.1.



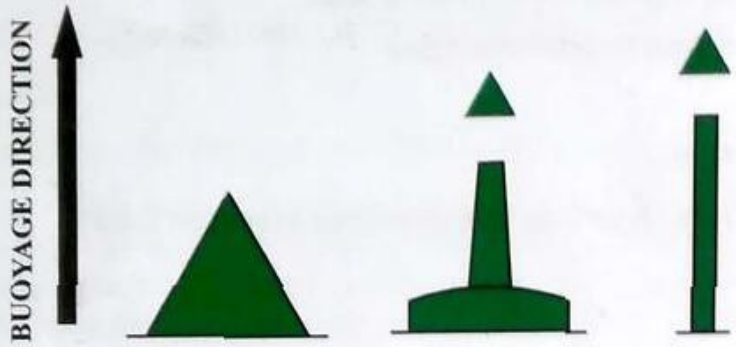



Scanned by CamScanner

2.3.2. Starboard hand Marks

| | | |
|---|---|---|
| Colour | : | Green |
| Shape (Buoys) | : | Conical, pillar or spar |
| Topmark (if any) | : | Single green cone, point upward |
| Light (when fitted) | : | |
| Colour | : | Green |
| Rhythm | : | Any, other than that described in section 2.3.3. |

Fig. 2.3.2.

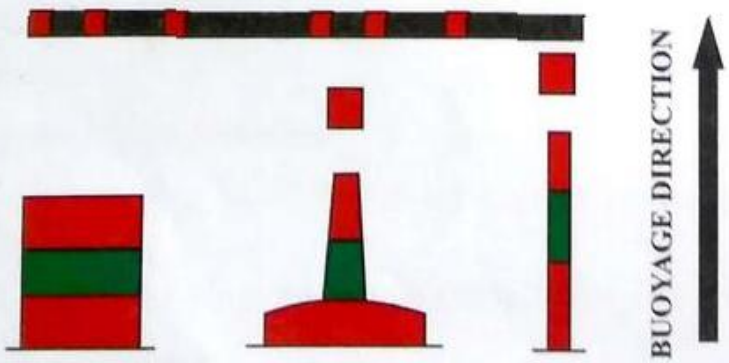



2.3.3. At the point where a channel divides, when proceeding in the "conventional direction of buoyage", a preferred channel may be indicated by a modified Port or Starboard lateral mark as follows:

2.3.3.1. Preferred channel to Starboard :

| | | |
|---|---|---|
| Colour | : | Red with one broad green horizontal band |
| Shape (Buoys) | : | Cylindrical (can), pillar or spar |
| Top mark (if any) | : | Single red cylinder (can) |
| Light (when fitted) | : | |
| Colour | : | Red |
| Rhythm | : | Composite group flashing (2+1) |

Fig. 2.3.3.1.



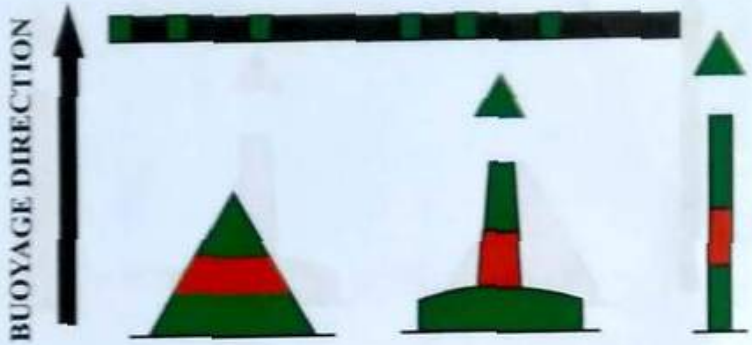



Scanned by CamScanner

2.3.3.2. Preferred channel to Port :

| | | |
|---|---|---|
| Colour | : | Green with one broad red horizontal band |
| Shape (Buoys) | : | Conical, pillar or spar |
| Topmark (if any) | : | Single green cone, point upward |
| *Light (when fitted)* | : | |
| Colour | : | Green |
| Rhythm | : | Composite group flashing (2+1) |

Fig. 2.3.3.2.

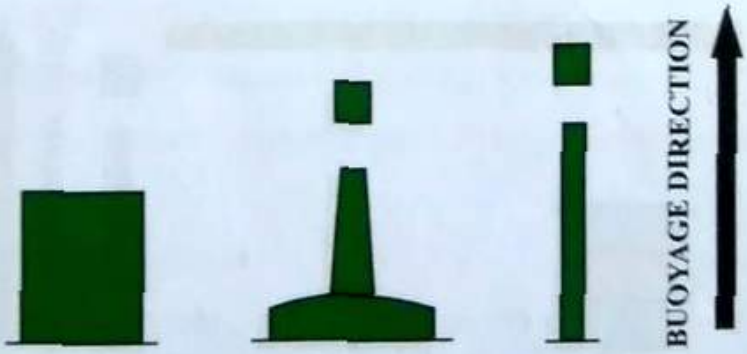



## 2.4. Description of Lateral Marks used in Region B

### 2.4.1. Port hand Marks

| | | |
|---|---|---|
| Colour | : | Green |
| Shape (Buoys) | : | Cylindrical (can), pillar or spar |
| *Topmark (if any)* | : | *Single green cylinder (can)* |
| Light (when fitted) | : | |
| Colour | : | Green |
| Rhythm | : | Any, other than that described in section 2.4.3. |

Fig. 2.4.1.

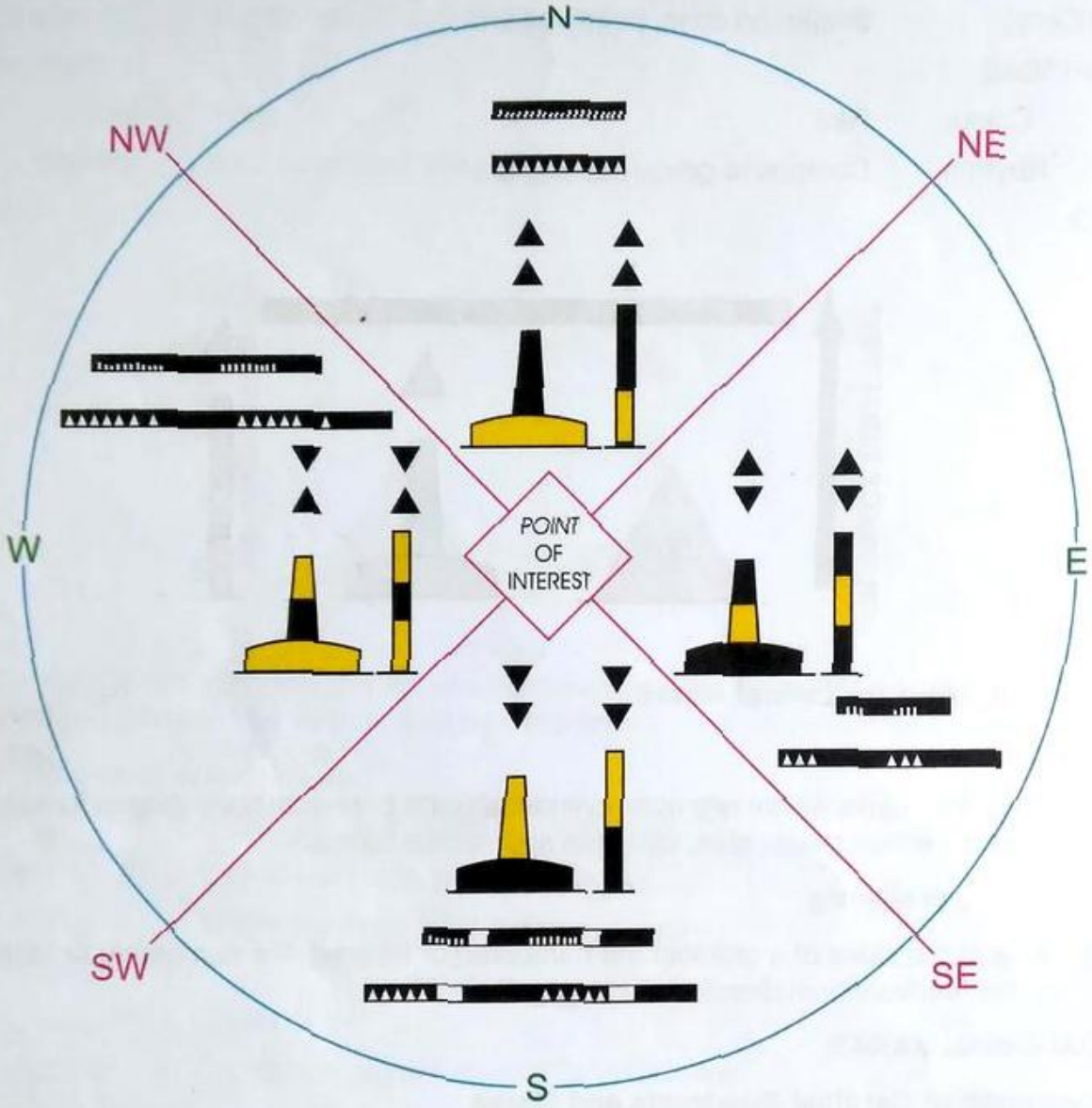





Scanned by CamScanner

3.2.3. To draw attention to a feature in a channel such as a bend, a junction, a bifurcation or the end of a shoal.

3.3. **Description of Cardinal Marks**




3.3.1. North Cardinal Mark

| | | |
|---|---|---|
| Topmark(a) | | : 2 black cones, one above the other, points upward |
| | Colour | : Black above yellow |
| | Shape | : Pillar or spar |
| Light (when fitted) | | : |
| Colour | | : White |
| Rhythm | | : VQ or Q |



Scanned by CamScanner

### 3.3.2. East Cardinal Mark

Topmark(a) : 2 black cones, one above the other, base to base

Colour : Black with a single broad horizontal yellow band

Shape : Pillar or spar

Light (when fitted) :

Colour : White

Rhythm : VQ(3) every 5s or
Q(3) every 10s

### 3.3.3. South Cardinal Mark

Topmark(a) : 2 black cones, one above the other, points downward

Colour : Yellow above black

Shape : Pillar or spar

Light (when fitted) :

Colour : White

Rhythm : VQ(6) + Long flash every 10s or
Q(6) + Long flash every 15s

### 3.3.4. West Cardinal Mark

Topmark(a) : 2 black cones, one above the other, point to point

Colour : Yellow with a single broad horizontal black band

Shape : Pillar or spar

Light (when fitted) :

Colour : White

Rhythm : VQ(9) every 10s or
Q(9) every 15s

(a) The double cone topmark is a very important feature of every Cardinal Mark by day, and should be used wherever practicable and be as large as possible with a clear separation between the cones. Cardinal marks



Scanned by CamScanner

## 4. ISOLATED DANGER MARKS

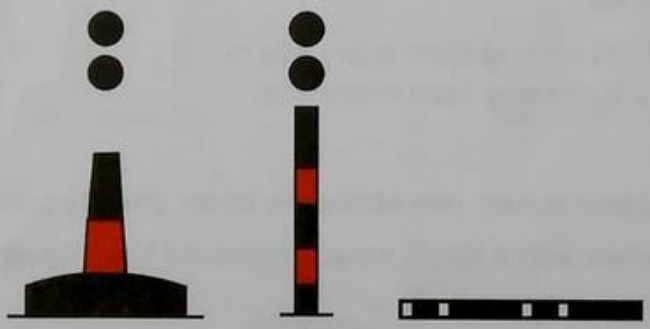
### 4.1. Definition of Isolated Danger Marks

An Isolated Danger Mark is a mark errected on, or moored on or above, an isolated danger which has navigable water all around it.

### 4.2. Description of Isolated Danger Marks

| | | |
|---|---|---|
| Topmark(b) | : | 2 black spheres, one above the other |
| Colour | : | Black with one or more broad horizontal red bands |
| Shape | : | Optional, but not conflicting with lateral marks; pillar or spar preferred |
| Light (when fitted) | : | |
| Colour | : | White |
| Rhythm | : | Group flashing (2) |

Fig. 4.2.



## 5. SAFE WATER MARKS

### 5.1. Definition of Safe Water Marks

Safe Water Marks serve to indicate that there is navigable water all round the Mark; these include centre line marks and midchannel marks. Such a mark may also be used as an alternative to a Cardinal or a Lateral Mark to indicate a landfall.

(b) The double sphere topmark is a very important feature of every isolated Danger Mark by day, and should be used wherever practicable and be as large as possible with a clear separation between the spheres.



Scanned by CamScanner

## 5.2. Description of Safe Water Marks

Colour : Red and white vertical stripes

Shape : Spherical; pillar or spar with spherical topmark

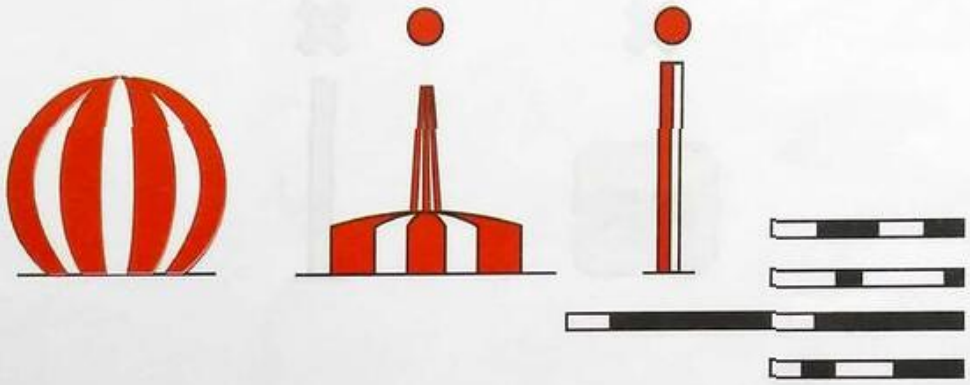
Topmark (if any ) : Single red sphere

Light (when fitted) :

Colour : White

Rhythm : Isophase, occulting, one long flash every 10s or Morse "A"

Fig. 5.2.



## 6. SPECIAL MARKS

### 6.1. Definition of Special Marks

Marks not primarily intended to assist navigation but which indicate a special area or feature referred to in appropriate nautical documents, for example :

6.1.1. Ocean Data Acquisition Systems (ODAS) Marks.

6.1.2. Traffic separation marks where use of conventional channel marking may cause confusion.

6.1.3. Spoil Ground Marks.

6.1.4. Military Exercise Zone Marks.

6.1.5. Cable or Pipeline Marks.

6.1.6. Recreation Zone Marks.



Scanned by CamScanner

6.2. **Description of Special Marks**

| | | |
|---|---|---|
| Colour | : | Yellow |
| Shape | : | Optional, but not conflicting with navigational Marks |
| Topmark (if any) | : | Single yellow 'X' shape |
| Light (when fitted) | : | |
| Colour | : | Yellow |
| Rhythm | : | Any, other than those described in sections 3, 4 or 5 |

Fig. 6.2.

6.3. **Additional Special Marks**

Special Marks other than those listed in paragraph 6.1 and described in paragraph 6.2 may be established by the responsible administration to meet exceptional circumstances. These additional marks shall not conflict with navigational marks and shall be promulgated in appropriate nautical documents and the International Association of Lighthouse Authorities notified as soon as practicable.

## 7. NEW DANGERS

### 7.1. Definition of New Dangers

The term "New Danger" is used to describe newly discovered hazards not yet indicated in nautical documents. "New Dangers" include naturally occurring obstructions such as sandbanks or rocks or man-made dangers such as wrecks.

7.2. Marking of New Dangers

7.2.1. "New Dangers" shall be marked in accordance with these rules. If the appropriate Authority considers the danger to be especially grave at least one of the marks shall be duplicated as soon as practicable.

7.2.2. Any lighted mark used for this purpose shall have an appropriate Cardinal or Lateral VQ or Q light character.

7.2.3. Any duplicate mark shall be identical to its partner in all respects.



Scanned by CamScanner

7.2.4. A "New Danger" may be marked by a racon, coded Morse "D" showing a signal length of 1 nautical mile on the radar display.

7.2.5. The duplicate mark may be removed when the appropriate Authority is satisfied that information concerning the "New Danger" has been sufficiently promulgated.

## 8. INTERNATIONAL BUOYAGE REGIONS A AND B

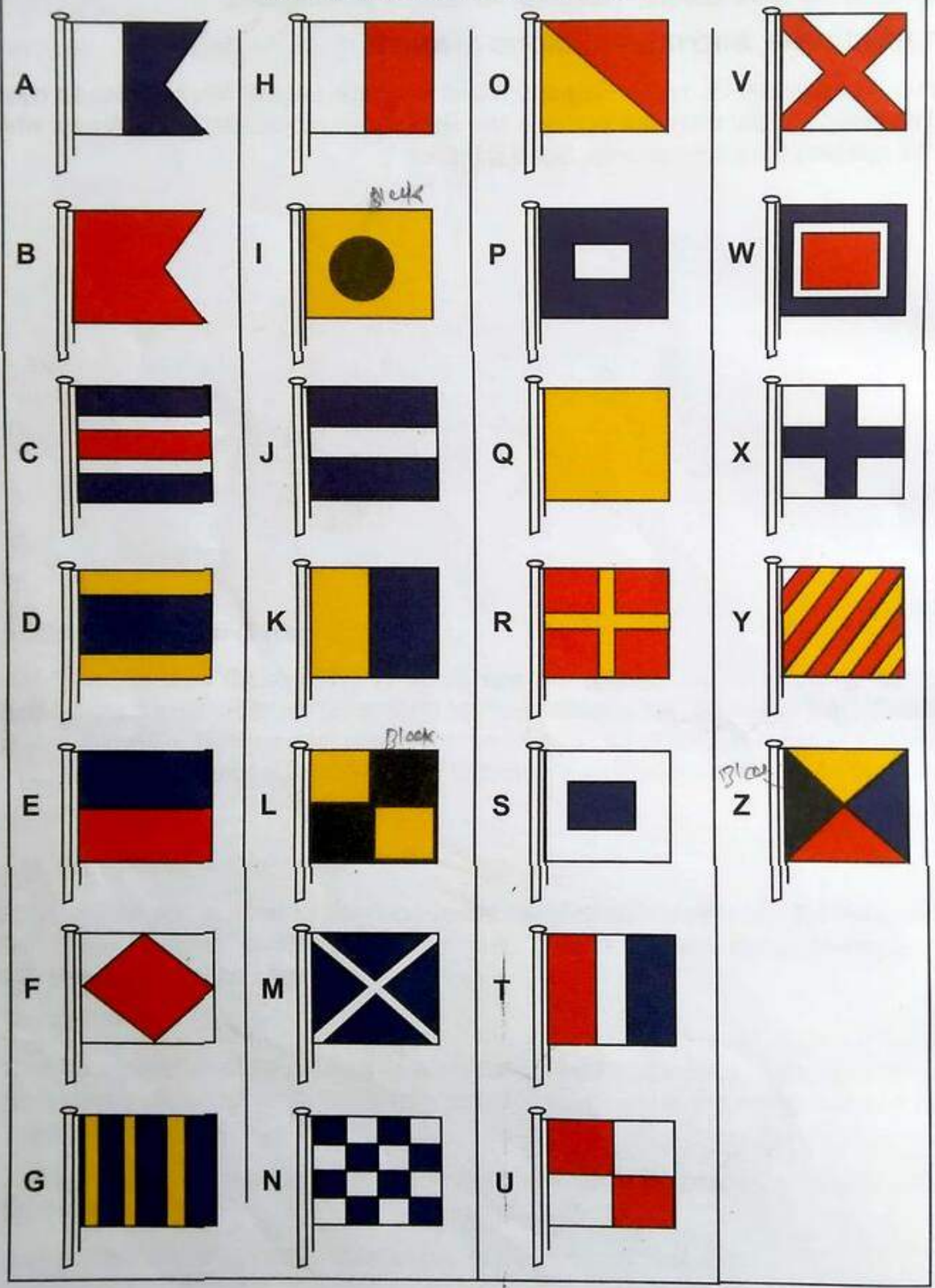
There are two International Buoyage Regions A and B where Lateral Marks differ as described in Section 2. The geographical divisions of these two Regions are indicated in the Annex which will, if necessary, be updated from time to time. Special marks



Scanned by CamScanner

# CHAPTER X

## A. ALPHABETICAL FLAGS

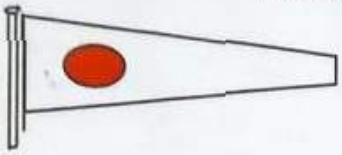





Scanned by CamScanner

## NUMERAL PENDANTS

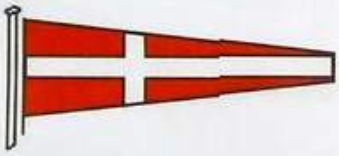
1



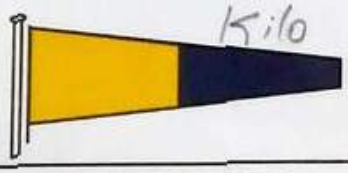
2

3

4



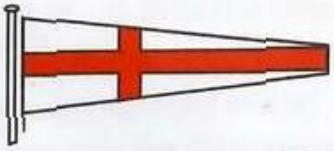
5



6

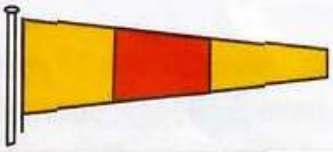
7

8



9

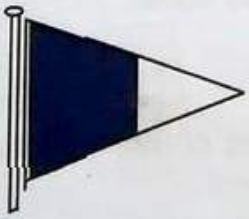
0



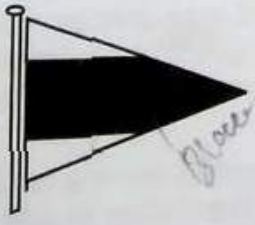
## SUBSTITUTES

FIRST SUBSTITUTES

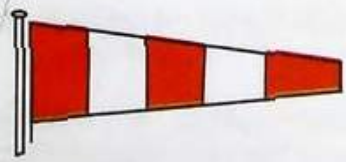
SECOND SUBSTITUTES



THIRD SUBSTITUTES



## CODE AND ANSWERING PENDANT





Scanned by CamScanner

## B. FLAG CODE

| | | |
|---|---|---|
| •▬ | A | - I have a diver down; keep well clear at slow speed |
| ▬•••| ★B | - I am taking in or discharging or carrying dangerous goods |
| —•—• | ★C | - Yes |
| —•• | ★D | - Keep clear of me, I am manoeuvring with difficulty |
| • | ★E | - I am altering course to starboard |
| ••—• | F | - I am disabled. Communicate with me. |
| ——• | ★G | - I require a pilot. |
| | | When made by fishing vessels operating in close proximity of fishing grounds, it means "I am hauling nets" |
| •••• | ★H | - I have a pilot on board |
| •• | ★I | - I am altering course to port |
| •——— | J | - I am on fire and have dangerous cargo on board : keep well clear of me |
| —•— | K | - I wish to communicate with you |
| •—•• | L | - You should stop your vessel instantly |
| —— | M | - My vessel is stopped and making no way through the water |
| —• | N | - No |
| ——— | O | - Man overboard |
| •——• | P | - In harbour - About to sail. All persons report for duty At sea - |
| Fishing → | | My nets have come fast upon an obstruction |
| ——•— | Q | - My vessel is healthy and I request free pratique |
| ••• | ★S | - My engines are going astern |
| — | ★T | - Keep clear of me. I am engaged in pair trawling |
| ••— | U | - You are running into danger |
| •••— | V | - I require assistance |
| •—— | W | - I require medical assistance |
| —••— | X | - Stop carrying out your intentions & watch for my signal |
| —•—— | Y | - I am dragging anchor |
| ——•• | ★Z | - I require a tug |
| | | When made by fishing vessels operating in close proximity on the fishing grounds it means. "I am Shooting nets" |

Note :

1. Signal of letters marked ★ when made by sound may only be made in compliance with the requirements of the International Regulations for Preventing Collisions of Sea, Rules 34 and 35 accepting that sound signals "G" and "Z" may continue to be used by fishing vessels fishing in close proximity to other fishing vessels.
2. Signals "K" and "S" have special meanings as landing signals for small boats with crews or persons in distress. (International Convention for the Safety of Life at Sea, 1974, Chapter V, Regulation 16).



Scanned by CamScanner

Pratique: Permission granted to a ship to have dealing with a port, given after quarantine or on showing a clean bill of health.



## C. MORSE SIGNALS

ALPHABET

| | | |
|---|---|---|
| A .- | I .. | Q - - . - |
| B - . . . | J . - - - | R . - . |
| C - . - . | K - . - | S . . . |
| D - . . | L . - . . | T - |
| E . | M - - | U . . - |
| F . . - . | N - . | V . . . - |
| G - - . | O - - - | W . - - |
| H . . . . | P . - - . | X - . . - |
| Y - . - - | | |
| Z - - . . | | |

NUMERALS

| | |
|---|---|
| 1 . - - - - | 6 - . . . . |
| 2 . . - - - | 7 - - . . . |
| 3 . . . - - | 8 - - - . . |
| 4 . . . . - | 9 - - - - . |
| 5 . . . . . | 0 - - - - - |

PROCEDURE SIGNALS

| | | |
|---|---|---|
| AR . - . - . | Over | CQ - . - . - . - Calling stations |
| AS . - . . . | Wait | |
| AAA . - . - . - | Full Stop | B T - . . . - Break |
| T - | Answering | K - . - Start |
| EEEE . . . . | Erase | R . - . Received |



Scanned by CamScanner

## D. INTERNATIONAL PHONETICS

| Letter | Word | Pronounced as |
|---|---|---|
| A | Alfa | **AL** FAH |
| B | Bravo | **BRAH** VOH |
| C | Charlie | **CHAR** LEE or **SHAR** LEE |
| D | Delta | **DELL** TAH |
| E | Echo | **ECH** OH |
| F | Foxtrot | **FOKS** TROT |
| G | Golf | GOLF |
| H | Hotel | HOH **TELL** |
| I | India | **IN** DEE AH |
| J | Juliett JEW | **LEE** ETT |
| K | Kilo | **KEY** LOH |
| L | Lima | **LEE** MAH |
| M | Mike | MIKE |
| N | November | NO **VEM** BER |
| O | Oscar | **OSS** CAH |
| P | Papa | PAH **PAH** |
| Q | Quebec | KEH **BECK** |
| R | Romeo | **ROW** ME OH |
| S | Sierra | SEE **AIR** RAH |
| T | Tango | **TANG** GO |
| U | Uniform | **YOU** NEE FORM or **OO** NEE FORM |
| V | Victor | **VIK** TAH |
| W | Whiskey | **WISS** KEY |
| X | X-ray | **ECKS** RAY |
| Y | Yankee | **YANG** KEY |
| Z | Zulu | **ZOO** LOO |



Scanned by CamScanner

| Figure | Word | Pronounced as |
|---|---|---|
| 0 | Nadazero | NAH-DAH-ZAY-ROH |
| 1 | Unaone | OO-NAH-WUN |
| 2 | Bissotwo | BEES-SOH-TOO |
| 3 | Terre Three | TAY-RAH-TREE |
| 4 | Kartefour | KAR-TAY-FOWER |
| 5 | Pantafive | PAN-TAH-FIVE |
| 6 | Soxisix | SOK-SEE-SIX |
| 7 | Setteseven | SAY-TAY-SEVEN |
| 8 | Octoeight | OK-TOH-EIGHT |
| 9 | Novenine | NO-VAY-NINE |
| 10 | Decemal | DAY-SEY-MAL |

DISTRESS SIGNALS :

| | | |
|---|---|---|
| AE | - | I must abandon my vessel |
| CB | - | I require immediate assistance |
| DX | - | I am sinking |
| HW | - | I have collided with a surface craft |

ANSWER :

| | | |
|---|---|---|
| ED | - | Your distress signals are understood |
| CP | - | I am proceeding to your assistance |
| EL | - | Repeat the distress position |



Scanned by CamScanner

# PART A

# MANDATORY STANDARDS REGARDING PROVISIONS OF THE ANNEX TO THE STCW CONVENTION

## CHAPTER VIII

## Standard regarding watchkeeping

**Section A-VIII/1**
**Fitness for duty**

1 Administrations shall take account of the danger posed by fatigue of seafarers, especially those whose duties involve the safe and secure operation of a ship.

2 All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:

.1 a minimum of 10 hours of rest in any 24-hour period; and

.2 77 hours in any 7-day period.

3 The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.

4 The requirements for rest periods laid down in paragraphs 2 and 3 need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by international instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue.

5 Administrations shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format* in the working language or languages of the ship and in English.

6 When a seafarer is on call, such as when a machinery space is unattended, the seafarer shall have an adequate compensatory rest period if the normal period of rest is disturbed by call-outs to work.

7 Administrations shall require that records of daily hours of rest of seafarers be maintained in a standardized format,* in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this section. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master and by the seafarers.

* The IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of work or hours of rest may be used.



Scanned by CamScanner

| Figure | Word | Pronounced as |
|---|---|---|
| 0 | Nadazero | NAH-DAH-ZAY-ROH |
| 1 | Unaone | OO-NAH-WUN |
| 2 | Bissotwo | BEES-SOH-TOO |
| 3 | Terre Three | TAY-RAH-TREE |
| 4 | Kartefour | KAR-TAY-FOWER |
| 5 | Pantafive | PAN-TAH-FIVE |
| 6 | Soxisix | SOK-SEE-SIX |
| 7 | Setteseven | SAY-TAY-SEVEN |
| 8 | Octoeight | OK-TOH-EIGHT |
| 9 | Novenine | NO-VAY-NINE |
| 10 | Decemal | DAY-SEY-MAL |

DISTRESS SIGNALS :

| | | |
|---|---|---|
| AE | - | I must abandon my vessel |
| CB | - | I require immediate assistance |
| DX | - | I am sinking |
| HW | - | I have collided with a surface craft |

ANSWER :

| | | |
|---|---|---|
| ED | - | Your distress signals are understood |
| CP | - | I am proceeding to your assistance |
| EL | - | Repeat the distress position |



Scanned by CamScanner

# PART A

# MANDATORY STANDARDS REGARDING PROVISIONS OF THE ANNEX TO THE STCW CONVENTION

## CHAPTER VIII

## Standard regarding watchkeeping

**Section A-VIII/1**
**Fitness for duty**

1 Administrations shall take account of the danger posed by fatigue of seafarers, especially those whose duties involve the safe and secure operation of a ship.

2 All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:

.1 a minimum of 10 hours of rest in any 24-hour period; and

.2 77 hours in any 7-day period.

3 The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.

4 The requirements for rest periods laid down in paragraphs 2 and 3 need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by international instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue.

5 Administrations shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format* in the working language or languages of the ship and in English.

6 When a seafarer is on call, such as when a machinery space is unattended, the seafarer shall have an adequate compensatory rest period if the normal period of rest is disturbed by call-outs to work.

7 Administrations shall require that records of daily hours of rest of seafarers be maintained in a standardized format,* in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this section. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master and by the seafarers.

* The IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of work or hours of rest may be used.



Scanned by CamScanner

8 Nothing in this section shall be deemed to impair the right of the master of a ship to require a seafarer to perform any hours of work necessary for the immediate safety of the ship, persons on board or cargo, or for the purpose of giving assistance to other ships or persons in distress at sea. Accordingly, the master may suspend the schedule of hours of rest and require a seafarer to perform any hours of work necessary until the normal situation has been restored. As soon as practicable after the normal situation has been restored, the master shall ensure that any seafarers who have performed work in a scheduled rest period are provided with an adequate period of rest.

9 Parties may allow exceptions from the required hours of rest in paragraphs 2.2 and 3 above provided that the rest period is not less than 70 hours in any 7-day period.

Exceptions from the weekly rest period provided for in paragraph 2.2 shall not be allowed for more than two consecutive weeks. The intervals between two periods of exceptions on board shall not be less than twice the duration of the exception.

The hours of rest provided for in paragraph 2.1 may be divided into no more than three periods, one of which shall be at least 6 hours in length and neither of the other two periods shall be less than one hour in length. The intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions shall not extend beyond two 24-hour periods in any 7-day period.

Exceptions shall, as far as possible, take into account the guidance regarding prevention of fatigue in section B-VIII/1.

10 Each Administration shall establish, for the purpose of preventing alcohol abuse, a limit of not greater than 0.05% blood alcohol level (BAC) or 0.25 mg/l alcohol in the breath or a quantity of alcohol leading to such alcohol concentration for masters, officers and other seafarers while performing designated safety, security and marine environmental duties.

## Section A-VIII/2
## Watchkeeping arrangements and principles to be observed

### PART 1 – CERTIFICATION

1 The officer in charge of the navigational or deck watch shall be duly qualified in accordance with the provisions of chapter II or chapter VII appropriate to the duties related to navigational or deck watchkeeping.

2 The officer in charge of the engineering watch shall be duly qualified in accordance with the provisions of chapter III or chapter VII appropriate to the duties related to engineering watchkeeping.

### PART 2 – VOYAGE PLANNING
### General requirements

3 The intended voyage shall be planned in advance, taking into consideration all pertinent information, and any course laid down shall be checked before the voyage commences.

4 The chief engineer officer shall, in consultation with the master, determine in advance the needs of the intended voyage, taking into consideration the requirements for fuel, water, lubricants, chemicals, expendable and other spare parts, tools, supplies and any other requirements.



Scanned by CamScanner

**Planning prior to each voyage**

5 Prior to each voyage, the master of every ship shall ensure that the intended route from the port of departure to the first port of call is planned using adequate and appropriate charts and other nautical publications necessary for the intended voyage, containing accurate, complete and up-to-date information regarding those navigational limitations and hazards which are of a permanent or predictable nature and which are relevant to the safe navigation of the ship.

**Verification and display of planned route**

6 When the route planning is verified, taking into consideration all pertinent information, the planned route shall be clearly displayed on appropriate charts and shall be continuously available to the officer in charge of the watch, who shall verify each course to be followed prior to using it during the voyage.

**Deviation from planned route**

7 If a decision is made, during a voyage, to change the next port of call of the planned route, or if it is necessary for the ship to deviate substantially from the planned route for other reasons, then an amended route shall be planned prior to deviating substantially from the route originally planned.

**PART 3 – WATCHKEEPING PRINCIPLES IN GENERAL**

8 Watches shall be carried out based on the following bridge and engine-room resource management principles:

.1 proper arrangements for watchkeeping personnel shall be ensured in accordance with the situations;

.2 any limitation in qualifications or fitness of individuals shall be taken into account when deploying watchkeeping personnel;

.3 understanding of watchkeeping personnel regarding their individual roles, responsibility and team roles shall be established;

.4 the master, chief engineer officer and officer in charge of watch duties shall maintain a proper watch, making the most effective use of the resources available, such as information, installations/equipment and other personnel;

.5 watchkeeping personnel shall understand functions and installations/equipment, and be familiar with handling them;

.6 watchkeeping personnel shall understand information and how to respond to information from each station/installation/equipment;

.7 information from the stations/installations/equipment shall be appropriately shared by all the watchkeeping personnel;

.8 watchkeeping personnel shall maintain an exchange of appropriate communication in any situation; and



Scanned by CamScanner

.9 watchkeeping personnel shall notify the master/chief engineer officer/officer in harge of watch duties without any hesitation when in any doubt as to what action to take in the interest of safety.

## PART 4 – WATCHKEEPING AT SEA

### Principles applying to watchkeeping generally

9 Parties shall direct the attention of companies, masters, chief engineer officers and watchkeeping personnel to the following principles, which shall be observed to ensure that safe watches are maintained at all times.

10 The master of every ship is bound to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational or cargo watch. Under the master's general direction, the officers of the navigational watch are responsible for navigating the ship safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

11 The chief engineer officer of every ship is bound, in consultation with the master, to ensure that watchkeeping arrangements are adequate to maintain a safe engineering watch.

### Protection of marine environment

12 The master, officers and ratings shall be aware of the serious effects of operational or accidental pollution of the marine environment and shall take all possible precautions to prevent such pollution, particularly within the framework of relevant international and port regulations.

### Part 4-1 – Principles to be observed in keeping a navigational watch

13 The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the ship and for complying with the International Regulations for Preventing Collisions at Sea, 1972, as amended.

### Lookout

14 A proper lookout shall be maintained at all times in compliance with rule 5 of the International Regulations for Preventing Collisions at Sea, 1972, as amended and shall serve the purpose of:

.1 maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment;

.2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and

.3 detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation.

15 The lookout must be able to give full attention to the keeping of a proper lookout and no other duties shall be undertaken or assigned which could interfere with that task.



Scanned by CamScanner

16 The duties of the lookout and helmsperson are separate and the helmsperson shall not be considered to be the lookout while steering, except in small ships where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper lookout. The officer in charge of the navigational watch may be the sole lookout in daylight provided that, on each such occasion:

.1 the situation has been carefully assessed and it has been established without doubt that it is safe to do so;

.2 full account has been taken of all relevant factors, including, but not limited to:

- state of weather,
- visibility,
- traffic density,
- proximity of dangers to navigation, and
- the attention necessary when navigating in or near traffic separation schemes; and

.3 assistance is immediately available to be summoned to the bridge when any change in the situation so requires.

17 In determining that the composition of the navigational watch is adequate to ensure that a proper lookout can continuously be maintained, the master shall take into account all relevant factors, including those described in this section of the Code, as well as the following factors:

.1 visibility, state of weather and sea;

.2 traffic density, and other activities occurring in the area in which the vessel is navigating;

.3 the attention necessary when navigating in or near traffic separation schemes or other routeing measures;

.4 the additional workload caused by the nature of the ship's functions, immediate operating requirements and anticipated manoeuvres;

.5 the fitness for duty of any crew members on call who are assigned as members of the watch;

.6 knowledge of, and confidence in, the professional competence of the ship's officers and crew;

.7 the experience of each officer of the navigational watch, and the familiarity of that officer with the ship's equipment, procedures, and manoeuvring capability;

.8 activities taking place on board the ship at any particular time, including radiocommunication activities, and the availability of assistance to be summoned immediately to the bridge when necessary;



Scanned by CamScanner

.9 the operational status of bridge instrumentation and controls, including alarm systems;

.10 rudder and propeller control and ship manoeuvring characteristics;

.11 the size of the ship and the field of vision available from the conning position;

.12 the configuration of the bridge, to the extent such configuration might inhibit a member of the watch from detecting by sight or hearing any external development; and

.13 any other relevant standard, procedure or guidance relating to watchkeeping arrangements and fitness for duty which has been adopted by the Organization.

**Watch arrangements**

18 When deciding the composition of the watch on the bridge, which may include appropriately qualified ratings, the following factors, inter alia, shall be taken into account:

.1 at no time shall the bridge be left unattended;

.2 weather conditions, visibility and whether there is daylight or darkness;

.3 proximity of navigational hazards which may make it necessary for the officer in charge of the watch to carry out additional navigational duties;

.4 use and operational condition of navigational aids such as ECDIS, radar or electronic position-indicating devices and any other equipment affecting the safe navigation of the ship;

.5 whether the ship is fitted with automatic steering;

.6 whether there are radio duties to be performed;

.7 unmanned machinery space (UMS) controls, alarms and indicators provided on the bridge, procedures for their use and their limitations; and

.8 any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

**Taking over the watch**

19 The officer in charge of the navigational watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is not capable of carrying out the watchkeeping duties effectively, in which case the master shall be notified.

20 The relieving officer shall ensure that the members of the relieving watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. Relieving officers shall not take over the watch until their vision is fully adjusted to the light conditions.

21 Prior to taking over the watch, relieving officers shall satisfy themselves as to the ship's estimated or true position and confirm its intended track, course and speed, and UMS controls as appropriate and shall note any dangers to navigation expected to be encountered during their watch.



Scanned by CamScanner

22 Relieving officers shall personally satisfy themselves regarding the:

.1 standing orders and other special instructions of the master relating to navigation of the ship;

.2 position, course, speed and draught of the ship;

.3 prevailing and predicted tides, currents, weather, visibility and the effect of these factors upon course and speed;

.4 procedures for the use of main engines to manoeuvre when the main engines are on bridge control; and

.5 navigational situation, including, but not limited to:

.5.1 the operational condition of all navigational and safety equipment being used or likely to be used during the watch;

.5.2 the errors of gyro- and magnetic compasses;

.5.3 the presence and movement of ships in sight or known to be in the vicinity;

.5.4 the conditions and hazards likely to be encountered during the watch; and

.5.5 the possible effects of heel, trim, water density and squat on under-keel clearance.

23 If, at any time, the officer in charge of the navigational watch is to be relieved when a manoeuvre or other action to avoid any hazard is taking place, the relief of that officer shall be deferred until such action has been completed.

**Performing the navigational watch**

24 The officer in charge of the navigational watch shall:

.1 keep the watch on the bridge;

.2 in no circumstances leave the bridge until properly relieved; and

.3 continue to be responsible for the safe navigation of the ship, despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood.

25 During the watch, the course steered, position and speed shall be checked at sufficiently frequent intervals, using any available navigational aids necessary, to ensure that the ship follows the planned course.

26 The officer in charge of the navigational watch shall have full knowledge of the location and operation of all safety and navigational equipment on board the ship and shall be aware and take account of the operating limitations of such equipment.

27 The officer in charge of the navigational watch shall not be assigned or undertake any duties which would interfere with the safe navigation of the ship.



Scanned by CamScanner

28 When using radar, the officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the International Regulations for Preventing Collisions at Sea, 1972, as amended in force.

29 In cases of need, the officer in charge of the navigational watch shall not hesitate to use the helm, engines and sound signalling apparatus. However, timely notice of intended variations of engine speed shall be given where possible or effective use shall be made of UMS engine controls provided on the bridge in accordance with the applicable procedures.

30 Officers of the navigational watch shall know the handling characteristics of their ship, including its stopping distances, and should appreciate that other ships may have different handling characteristics.

31 A proper record shall be kept during the watch of the movements and activities relating to the navigation of the ship.

32 It is of special importance that at all times the officer in charge of the navigational watch ensures that a proper lookout is maintained. In a ship with a separate chartroom, the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but shall first ensure that it is safe to do so and that proper lookout is maintained.

33 Operational tests of shipboard navigational equipment shall be carried out at sea as frequently as practicable and as circumstances permit, in particular before hazardous conditions affecting navigation are expected. Whenever appropriate, these tests shall be recorded. Such tests shall also be carried out prior to port arrival and departure.

34 The officer in charge of the navigational watch shall make regular checks to ensure that:

.1 the person steering the ship or the automatic pilot is steering the correct course;

.2 the standard compass error is determined at least once a watch and, when possible, after any major alteration of course; the standard and gyro-compasses are frequently compared and repeaters are synchronized with their master compass;

.3 the automatic pilot is tested manually at least once a watch;

.4 the navigation and signal lights and other navigational equipment are functioning properly;

.5 the radio equipment is functioning properly in accordance with paragraph 86 of this section; and

.6 the UMS controls, alarms and indicators are functioning properly.

35 The officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the requirements in force of the International Convention for the Safety of Life at Sea (SOLAS), 1974*. The officer of the navigational watch shall take into account:

* See SOLAS regulations V/24, V/25 and V/26.



Scanned by CamScanner

.1 the need to station a person to steer the ship and to put the steering into manual control in good time to allow any potentially hazardous situation to be dealt with in a safe manner; and

.2 that, with a ship under automatic steering, it is highly dangerous to allow a situation to develop to the point where the officer in charge of the navigational watch is without assistance and has to break the continuity of the lookout in order to take emergency action.

36 Officers of the navigational watch shall be thoroughly familiar with the use of all electronic navigational aids carried, including their capabilities and limitations, and shall use each of these aids when appropriate and shall bear in mind that the echo-sounder is a valuable navigational aid.

37 The officer in charge of the navigational watch shall use the radar whenever restricted visibility is encountered or expected, and at all times in congested waters, having due regard to its limitations.

38 The officer in charge of the navigational watch shall ensure that the range scales employed are changed at sufficiently frequent intervals so that echoes are detected as early as possible. It shall be borne in mind that small or poor echoes may escape detection.

39 Whenever radar is in use, the officer in charge of the navigational watch shall select an appropriate range scale and observe the display carefully, and shall ensure that plotting or systematic analysis is commenced in ample time.

40 The officer in charge of the navigational watch shall notify the master immediately:

.1 if restricted visibility is encountered or expected;

.2 if the traffic conditions or the movements of other ships are causing concern;

.3 if difficulty is experienced in maintaining course;

.4 on failure to sight land, or a navigation mark or to obtain soundings by the expected time;

.5 if, unexpectedly, land or a navigation mark is sighted or a change in soundings occurs;

.6 on breakdown of the engines, propulsion machinery remote control, steering gear or any essential navigational equipment, alarm or indicator;

.7 if the radio equipment malfunctions;

.8 in heavy weather, if in any doubt about the possibility of weather damage;

.9 if the ship meets any hazard to navigation, such as ice or a derelict; and

.10 in any other emergency or if in any doubt.



Scanned by CamScanner

41 Despite the requirement to notify the master immediately in the foregoing circumstances, the officer in charge of the navigational watch shall, in addition, not hesitate to take immediate action for the safety of the ship, where circumstances so require.

42 The officer in charge of the navigational watch shall give watchkeeping personnel all appropriate instructions and information which will ensure the keeping of a safe watch, including a proper lookout.

**Watchkeeping under different conditions and in different areas**

**Clear weather**

43 The officer in charge of the navigational watch shall take frequent and accurate compass bearings of approaching ships as a means of early detection of risk of collision and shall bear in mind that such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large ship or a tow or when approaching a ship at close range. The officer in charge of the navigational watch shall also take early and positive action in compliance with the applicable International Regulations for Preventing Collisions at Sea, 1972, as amended and subsequently check that such action is having the desired effect.

44 In clear weather, whenever possible, the officer in charge of the navigational watch shall carry out radar practice.

**Restricted visibility**

45 When restricted visibility is encountered or expected, the first responsibility of the officer in charge of the navigational watch is to comply with the relevant rules of the International Regulations for Preventing Collisions at Sea, 1972, as amended with particular regard to the sounding of fog signals, proceeding at a safe speed and having the engines ready for immediate manoeuvre. In addition, the officer in charge of the navigational watch shall:

.1 inform the master;

.2 post a proper lookout;

.3 exhibit navigation lights; and

.4 operate and use the radar.

**In hours of darkness**

46 The master and the officer in charge of the navigational watch, when arranging lookout duty, shall have due regard to the bridge equipment and navigational aids available for use, their limitations, procedures and safeguards implemented.

**Coastal and congested waters**

47 The largest scale chart on board, suitable for the area and corrected with the latest available information, shall be used. Fixes shall be taken at frequent intervals, and shall be carried out by more than one method whenever circumstances allow. When using ECDIS, appropriate usage code (scale) electronic navigational charts shall be used and the ship's position shall be checked by an independent means of position fixing at appropriate intervals.



Scanned by CamScanner

48 The officer in charge of the navigational watch shall positively identify all relevant navigation marks.

**Navigation with pilot on board**

49 Despite the duties and obligations of pilots, their presence on board does not relieve the master or the officer in charge of the navigational watch from their duties and obligations for the safety of the ship. The master and the pilot shall exchange information regarding navigation procedures, local conditions and the ship's characteristics. The master and/or the officer in charge of the navigational watch shall co-operate closely with the pilot and maintain an accurate check on the ship's position and movement.

50 If in any doubt as to the pilot's actions or intentions, the officer in charge of the navigational watch shall seek clarification from the pilot and, if doubt still exists, shall notify the master immediately and take whatever action is necessary before the master arrives.

**Ship at anchor**

51 If the master considers it necessary, a continuous navigational watch shall be maintained at anchor. While at anchor, the officer in charge of the navigational watch shall:

.1 determine and plot the ship's position on the appropriate chart as soon as practicable;

.2 when circumstances permit, check at sufficiently frequent intervals whether the ship is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects;

.3 ensure that proper lookout is maintained;

.4 ensure that inspection rounds of the ship are made periodically;

.5 observe meteorological and tidal conditions and the state of the sea;

.6 notify the master and undertake all necessary measures if the ship drags anchor;

.7 ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions;

.8 if visibility deteriorates, notify the master;

.9 ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with all applicable regulations; and

.10 take measures to protect the environment from pollution by the ship and comply with applicable pollution regulations.

**Part 4-2 – Principles to be observed in keeping an engineering watch**

52 The term engineering watch as used in parts 4-2, 5-2 and 5-4 of this section means either a person or a group of personnel comprising the watch or a period of responsibility for an officer during which the physical presence in machinery spaces of that officer may or may not be required.



Scanned by CamScanner

53 The officer in charge of the engineering watch is the chief engineer officer's representative and is primarily responsible, at all times, for the safe and efficient operation and upkeep of machinery affecting the safety of the ship and is responsible for the inspection, operation and testing, as required, of all machinery and equipment under the responsibility of the engineering watch.

**Watch arrangements**

54 The composition of the engineering watch shall, at all times, be adequate to ensure the safe operation of all machinery affecting the operation of the ship, in either automated or manual mode, and be appropriate to the prevailing circumstances and conditions.

55 When deciding the composition of the engineering watch, which may include appropriately qualified ratings, the following criteria, inter alia, shall be taken into account:

.1 the type of ship and the type and condition of the machinery;

.2 the adequate supervision, at all times, of machinery affecting the safe operation of the ship;

.3 any special modes of operation dictated by conditions such as weather, ice, contaminated water, shallow water, emergency conditions, damage containment orpollution abatement;

.4 the qualifications and experience of the engineering watch;

.5 the safety of life, ship, cargo and port, and protection of the environment;

.6 the observance of international, national and local regulations; and

.7 maintaining the normal operations of the ship.

**Taking over the watch**

56 The officer in charge of the engineering watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is obviously not capable of carrying out the watchkeeping duties effectively, in which case the chief engineer officer shall be notified.

57 The relieving officer of the engineering watch shall ensure that the members of the relieving engineering watch are apparently fully capable of performing their duties effectively.

58 Prior to taking over the engineering watch, relieving officers shall satisfy themselves regarding at least the following:

.1 the standing orders and special instructions of the chief engineer officer relating to the operation of the ship's systems and machinery;

.2 the nature of all work being performed on machinery and systems, the personnel involved and potential hazards;

.3 the level and, where applicable, the condition of water or residues in bilges, ballast tanks, slop tanks, reserve tanks, fresh water tanks, sewage tanks and any special requirements for use or disposal of the contents thereof;



Scanned by CamScanner

.4 the condition and level of fuel in the reserve tanks, settling tank, day tank and other fuel storage facilities;

.5 any special requirements relating to sanitary system disposals;

.6 condition and mode of operation of the various main and auxiliary systems, including the electrical power distribution system;

.7 where applicable, the condition of monitoring and control console equipment, and which equipment is being operated manually;

.8 where applicable, the condition and mode of operation of automatic boiler controls such as flame safeguard control systems, limit control systems, combustion control systems, fuel-supply control systems and other equipment related to the operation of steam boilers;

.9 any potentially adverse conditions resulting from bad weather, ice, or contaminated or shallow water;

.10 any special modes of operation dictated by equipment failure or adverse ship conditions;

.11 the reports of engine-room ratings relating to their assigned duties;

.12 the availability of fire-fighting appliances; and

.13 the state of completion of the engine-room log.

**Performing the engineering watch**

59 The officer in charge of the engineering watch shall ensure that the established watchkeeping arrangements are maintained and that, under direction, engine-room ratings, if forming part of the engineering watch, assist in the safe and efficient operation of the propulsion machinery and auxiliary equipment.

60 The officer in charge of the engineering watch shall continue to be responsible for machinery-space operations, despite the presence of the chief engineer officer in the machinery spaces, until specifically informed that the chief engineer officer has assumed that responsibility and this is mutually understood.

61 All members of the engineering watch shall be familiar with their assigned watchkeeping duties. In addition, every member shall, with respect to the ship they are serving in, have knowledge of:

.1 the use of appropriate internal communication systems;

.2 the escape routes from machinery spaces;

.3 the engine-room alarm systems and be able to distinguish between the various alarms, with special reference to the fire-extinguishing media alarm; and



Scanned by CamScanner

.4 the number, location and types of fire-fighting equipment and damage-control gear in the machinery spaces, together with their use and the various safety precautions to be observed.

62 Any machinery not functioning properly, expected to malfunction or requiring special service shall be noted along with any action already taken. Plans shall be made for any further action if required.

63 When the machinery spaces are in the manned condition, the officer in charge of the engineering watch shall at all times be readily capable of operating the propulsion equipment in response to needs for changes in direction or speed.

64 When the machinery spaces are in the periodic unmanned condition, the designated duty officer in charge of the engineering watch shall be immediately available and on call to attend the machinery spaces.

65 All bridge orders shall be promptly executed. Changes in direction or speed of the main propulsion units shall be recorded, except where an Administration has determined that the size or characteristics of a particular ship make such recording impracticable. The officer in charge of the engineering watch shall ensure that the main propulsion unit controls, when in the manual mode of operation, are continuously attended under stand-by or manoeuvring conditions.

66 Due attention shall be paid to the ongoing maintenance and support of all machinery, including mechanical, electrical, electronic, hydraulic and pneumatic systems, their control apparatus and associated safety equipment, all accommodation service systems equipment and the recording of stores and spare gear usage.

67 The chief engineer officer shall ensure that the officer in charge of the engineering watch is informed of all preventive maintenance, damage control, or repair operations to be performed during the engineering watch. The officer in charge of the engineering watch shall be responsible for the isolation, bypassing and adjustment of all machinery under the responsibility of the engineering watch that is to be worked on, and shall record all work carried out.

68 When the engine-room is put in a stand-by condition, the officer in charge of the engineering watch shall ensure that all machinery and equipment which may be used during manoeuvring is in a state of immediate readiness and that an adequate reserve of power is available for steering gear and other requirements.

69 Officers in charge of an engineering watch shall not be assigned or undertake any duties which would interfere with their supervisory duties in respect of the main propulsion system and ancillary equipment. They shall keep the main propulsion plant and auxiliary systems under constant supervision until properly relieved, and shall periodically inspect the machinery in their charge. They shall also ensure that adequate rounds of the machinery and steering-gear spaces are made for the purpose of observing and reporting equipment malfunctions or breakdowns, performing or directing routine adjustments, required upkeep and any other necessary tasks.

70 Officers in charge of an engineering watch shall direct any other member of the engineering watch to inform them of potentially hazardous conditions which may adversely affect the machinery or jeopardize the safety of life or of the ship.



Scanned by CamScanner

71 The officer in charge of the engineering watch shall ensure that the machinery space watch is supervised, and shall arrange for substitute personnel in the event of the incapacity of any engineering watch personnel. The engineering watch shall not leave the machinery spaces unsupervised in a manner that would prevent the manual operation of the engine-room plant or throttles.

72 The officer in charge of the engineering watch shall take the action necessary to contain the effects of damage resulting from equipment breakdown, fire, flooding, rupture, collision, stranding, or other cause.

73 Before going off duty, the officer in charge of the engineering watch shall ensure that all events related to the main and auxiliary machinery which have occurred during the engineering watch are suitably recorded.

74 The officer in charge of the engineering watch shall co-operate with any engineer in charge of maintenance work during all preventive maintenance, damage control or repairs. This shall include, but not necessarily be limited to:

.1 isolating and bypassing machinery to be worked on;

.2 adjusting the remaining plant to function adequately and safely during the maintenance period;

.3 recording, in the engine-room log or other suitable document, the equipment worked on and the personnel involved, and which safety steps have been taken and by whom, for the benefit of relieving officers and for record purposes; and

.4 testing and putting into service, when necessary, the repaired machinery or equipment.

75 The officer in charge of the engineering watch shall ensure that any engine-room ratings who perform maintenance duties are available to assist in the manual operation of machinery in the event of automatic equipment failure.

76 The officer in charge of the engineering watch shall bear in mind that changes in speed, resulting from machinery malfunction, or any loss of steering may imperil the safety of the ship and life at sea. The bridge shall be immediately notified in the event of fire and of any impending action in machinery spaces that may cause reduction in the ship's speed, imminent steering failure, stoppage of the ship's propulsion system or any alteration in the generation of electric power or similar threat to safety. This notification, where possible, shall be accomplished before changes are made, in order to afford the bridge the maximum available time to take whatever action is possible to avoid a potential marine casualty.

77 The officer in charge of the engineering watch shall notify the chief engineer officer without delay:

.1 when engine damage or a malfunction occurs which may be such as to endanger the safe operation of the ship;

.2 when any malfunction occurs which, it is believed, may cause damage or breakdown of propulsion machinery, auxiliary machinery or monitoring and governing systems; and



Scanned by CamScanner

.3 in any emergency or if in any doubt as to what decision or measures to take.

78 Despite the requirement to notify the chief engineer officer in the foregoing circumstances, the officer in charge of the engineering watch shall not hesitate to take immediate action for the safety of the ship, its machinery and crew where circumstances require.

79 The officer in charge of the engineering watch shall give the watchkeeping personnel all appropriate instructions and information which will ensure the keeping of a safe engineering watch. Routine machinery upkeep, performed as incidental tasks as a part of keeping a safe watch, shall be set up as an integral part of the watch routine. Detailed repair maintenance involving repairs to electrical, mechanical, hydraulic, pneumatic or applicable electronic equipment throughout the ship shall be performed with the cognizance of the officer in charge of the engineering watch and chief engineer officer. These repairs shall be recorded.

**Engineering watchkeeping under different conditions and in different areas**

**Restricted visibility**

80 The officer in charge of the engineering watch shall ensure that permanent air or steam pressure is available for sound signals and that at all times bridge orders relating to changes in speed or direction of operation are immediately implemented and, in addition, that auxiliary machinery used for manoeuvring is readily available.

**Coastal and congested waters**

81 The officer in charge of the engineering watch shall ensure that all machinery involved with the manoeuvring of the ship can immediately be placed in the manual mode of operation when notified that the ship is in congested waters. The officer in charge of the engineering watch shall also ensure that an adequate reserve of power is available for steering and other manoeuvring requirements. Emergency steering and other auxiliary equipment shall be ready for immediate operation.

**Ship at anchor**

82 At an unsheltered anchorage the chief engineer officer shall consult with the master whether or not to maintain the same engineering watch as when under way.

83 When a ship is at anchor in an open roadstead or any other virtually "at-sea" condition, the engineer officer in charge of the engineering watch shall ensure that:

.1 an efficient engineering watch is kept;

.2 periodic inspection is made of all operating and stand-by machinery;

.3 main and auxiliary machinery is maintained in a state of readiness in accordance with orders from the bridge;

.4 measures are taken to protect the environment from pollution by the ship, and that applicable pollution-prevention regulations are complied with; and

.5 all damage-control and fire-fighting systems are in readiness.



Scanned by CamScanner

## Part 4-3 – Principles to be observed in keeping a radio watch

### General provisions

84 Administrations shall direct the attention of companies, masters and radio watchkeeping personnel to comply with the following provisions to ensure that an adequate safety radio watch is maintained while a ship is at sea. In complying with this Code, account shall be taken of the Radio Regulations.

### Watch arrangements

85 In deciding the arrangements for the radio watch, the master of every seagoing ship shall:

.1 ensure that the radio watch is maintained in accordance with the relevant provisions of the Radio Regulations and the SOLAS Convention;

.2 ensure that the primary duties for radio watchkeeping are not adversely affected by attending to radio traffic not relevant to the safe movement of the ship and safety of navigation; and

.3 take into account the radio equipment fitted on board and its operational status.

### Performing the radio watch

86 The radio operator performing radio watchkeeping duties shall:

.1 ensure that watch is maintained on the frequencies specified in the Radio Regulations and the SOLAS Convention; and

.2 while on duty, regularly check the operation of the radio equipment and its sources of energy and report to the master any observed failure of this equipment.

87 The requirements of the Radio Regulations and the SOLAS Convention on keeping a radiotelegraph or radio log, as appropriate, shall be complied with.

88 The maintenance of radio records, in compliance with the requirements of the Radio Regulations and the SOLAS Convention, is the responsibility of the radio operator designated as having primary responsibility for radiocommunications during distress incidents. The following shall be recorded, together with the times at which they occur:

.1 a summary of distress, urgency and safety radiocommunications;

.2 important incidents relating to the radio service;

.3 where appropriate, the position of the ship at least once per day; and

.4 a summary of the condition of the radio equipment, including its sources of energy.

89 The radio records shall be kept at the distress communications operating position, and shall be made available:

.1 for inspection by the master; and

.2 for inspection by any authorized official of the Administration and by any duly authorized officer exercising control under article X of the Convention.



Scanned by CamScanner

## PART 5 – WATCHKEEPING IN PORT

### Principles applying to all watchkeeping

#### General

90 On any ship safely moored or safely at anchor under normal circumstances in port, the master shall arrange for an appropriate and effective watch to be maintained for the purpose of safety. Special requirements may be necessary for special types of ships' propulsion systems or ancillary equipment and for ships carrying hazardous, dangerous, toxic or highly flammable materials or other special types of cargo.

#### Watch arrangements

91 Arrangements for keeping a deck watch when the ship is in port shall at all times be adequate to:

.1 ensure the safety of life, of the ship, the port and the environment, and the safe operation of all machinery related to cargo operation;

.2 observe international, national and local rules; and

.3 maintain order and the normal routine of the ship.

92 The master shall decide the composition and duration of the deck watch depending on the conditions of mooring, type of the ship and character of duties.

93 If the master considers it necessary, a qualified officer shall be in charge of the deck watch.

94 The necessary equipment shall be so arranged as to provide for efficient watchkeeping.

95 The chief engineer officer, in consultation with the master, shall ensure that engineering watchkeeping arrangements are adequate to maintain a safe engineering watch while in port. When deciding the composition of the engineering watch, which may include appropriate engine-room ratings, the following points are among those to be taken into account:

.1 on all ships of 3,000 kW propulsion power and over there shall always be an officer in charge of the engineering watch;

.2 on ships of less than 3,000 kW propulsion power there may be, at the master's discretion and in consultation with the chief engineer officer, no officer in charge of the engineering watch; and

.3 officers, while in charge of an engineering watch, shall not be assigned or undertake any task or duty which would interfere with their supervisory duty in respect of the ship's machinery system.

#### Taking over the watch

96 Officers in charge of the deck or engineering watch shall not hand over the watch to their relieving officer if they have any reason to believe that the latter is obviously not capable of



Scanned by CamScanner

carrying out watchkeeping duties effectively, in which case the master or chief engineer shall be notified accordingly. Relieving officers of the deck or engineering watch shall ensure that all members of their watch are apparently fully capable of performing their duties effectively.

97 If, at the moment of handing over the deck or engineering watch, an important operation is being performed, it shall be concluded by the officer being relieved, except when ordered otherwise by the master or chief engineer officer.

**Part 5-1 – Taking over the deck watch**

98 Prior to taking over the deck watch, the relieving officer shall be informed by the officer in charge of the deck watch as to the following:

.1 the depth of the water at the berth, the ship's draught, the level and time of high and low waters; the securing of the moorings, the arrangement of anchors and the scope of the anchor chain, and other mooring features important to the safety of the ship; the state of main engines and their availability for emergency use;

.2 all work to be performed on board the ship; the nature, amount and disposition of cargo loaded or remaining, and any residue on board after unloading the ship;

.3 the level of water in bilges and ballast tanks;

.4 the signals or lights being exhibited or sounded;

.5 the number of crew members required to be on board and the presence of any other persons on board;

.6 the state of fire-fighting appliances;

.7 any special port regulations;

.8 the master's standing and special orders;

.9 the lines of communication available between the ship and shore personnel, including port authorities, in the event of an emergency arising or assistance being required;

.10 any other circumstances of importance to the safety of the ship, its crew, cargo or protection of the environment from pollution; and

.11 the procedures for notifying the appropriate authority of any environmental pollution resulting from ship activities.

99 Relieving officers, before assuming charge of the deck watch, shall verify that:

.1 the securing of moorings and anchor chain is adequate;

.2 the appropriate signals or lights are properly exhibited or sounded;

.3 safety measures and fire-protection regulations are being maintained;



Scanned by CamScanner

.4 they are aware of the nature of any hazardous or dangerous cargo being loaded or discharged and the appropriate action to be taken in the event of any spillage or fire; and

.5 no external conditions or circumstances imperil the ship and that it does not imperil others.

**Part 5-2 – Taking over the engineering watch**

100 Prior to taking over the engineering watch, the relieving officer shall be informed by the officer in charge of the engineering watch as to:

.1 the standing orders of the day, any special orders relating to the ship operations, maintenance functions, repairs to the ship's machinery or control equipment;

.2 the nature of all work being performed on machinery and systems on board ship, personnel involved and potential hazards;

.3 the level and condition, where applicable, of water or residue in bilges, ballast tanks, slop tanks, sewage tanks, reserve tanks and special requirements for the use or disposal of the contents thereof;

.4 any special requirements relating to sanitary system disposals;

.5 the condition and state of readiness of portable fire-extinguishing equipment and fixed fire-extinguishing installations and fire-detection systems;

.6 authorized repair personnel on board engaged in engineering activities, their work locations and repair functions and other authorized persons on board and the required crew;

.7 any port regulations pertaining to ship effluents, fire-fighting requirements and ship readiness, particularly during potential bad weather conditions;

.8 the lines of communication available between the ship and shore personnel, including port authorities, in the event of an emergency arising or assistance being required;

.9 any other circumstance of importance to the safety of the ship, its crew, cargo or the protection of the environment from pollution; and

.10 the procedures for notifying the appropriate authority of environmental pollution resulting from engineering activities.

101 Relieving officers, before assuming charge of the engineering watch, shall satisfy themselves that they are fully informed by the officer being relieved, as outlined above, and:

.1 be familiar with existing and potential sources of power, heat and lighting and their distribution;

.2 know the availability and condition of ship's fuel, lubricants and all water supplies; and



Scanned by CamScanner

.3 be ready to prepare the ship and its machinery, as far as is possible, for stand-by or emergency conditions as required.

**Part 5-3 – Performing the deck watch**

102 The officer in charge of the deck watch shall:

.1 make rounds to inspect the ship at appropriate intervals;

.2 pay particular attention to:

.2.1 the condition and securing of the gangway, anchor chain and moorings, especially at the turn of the tide and in berths with a large rise and fall, if necessary, taking measures to ensure that they are in normal working condition;

.2.2 the draught, under-keel clearance and the general state of the ship, to avoid dangerous listing or trim during cargo handling or ballasting;

.2.3 the weather and sea state;

.2.4 the observance of all regulations concerning safety and fire protection;

.2.5 the water level in bilges and tanks;

.2.6 all persons on board and their location, especially those in remote or enclosed spaces; and

.2.7 the exhibition and sounding, where appropriate, of lights and signals;

.3 in bad weather, or on receiving a storm warning, take the necessary measures to protect the ship, persons on board and cargo;

.4 take every precaution to prevent pollution of the environment by the ship;

.5 in an emergency threatening the safety of the ship, raise the alarm, inform the master, take all possible measures to prevent any damage to the ship, its cargo and persons on board, and, if necessary, request assistance from the shore authorities or neighbouring ships;

.6 be aware of the ship's stability condition so that, in the event of fire, the shore fire-fighting authority may be advised of the approximate quantity of water that can be pumped on board without endangering the ship;

.7 offer assistance to ships or persons in distress;

.8 take necessary precautions to prevent accidents or damage when propellers are to be turned; and

.9 enter, in the appropriate log-book, all important events affecting the ship.



Scanned by CamScanner

## Part 5-4 – Performing the engineering watch

103 Officers in charge of the engineering watch shall pay particular attention to:

.1 the observance of all orders, special operating procedures and regulations concerning hazardous conditions and their prevention in all areas in their charge;

.2 the instrumentation and control systems, monitoring of all power supplies, components and systems in operation;

.3 the techniques, methods and procedures necessary to prevent violation of the pollution regulations of the local authorities; and

.4 the state of the bilges.

104 Officers in charge of the engineering watch shall:

.1 in emergencies, raise the alarm when, in their opinion, the situation so demands, and take all possible measures to prevent damage to the ship, persons on board and cargo;

.2 be aware of the deck officer's needs relating to the equipment required in the loading or unloading of the cargo and the additional requirements of the ballast and other ship stability control systems;

.3 make frequent rounds of inspection to determine possible equipment malfunction or failure, and take immediate remedial action to ensure the safety of the ship, of cargo operations, of the port and the environment;

.4 ensure that the necessary precautions are taken, within their area of responsibility, to prevent accidents or damage to the various electrical, electronic, hydraulic, pneumatic and mechanical systems of the ship; and

.5 ensure that all important events affecting the operation, adjustment or repair of the ship's machinery are satisfactorily recorded.

## Part 5-5 – Watch in port on ships carrying hazardous cargo

### General

105 The master of every ship carrying cargo that is hazardous, whether explosive, flammable, toxic, health-threatening or environment-polluting, shall ensure that safe watchkeeping arrangements are maintained. On ships carrying hazardous cargo in bulk, this will be achieved by the ready availability on board of a duly qualified officer or officers, and ratings where appropriate, even when the ship is safely moored or safely at anchor in port.

106 On ships carrying hazardous cargo other than in bulk, the master shall take full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions on board, afloat and ashore.



Scanned by CamScanner

**Part 5-6 – Cargo watch**

107 Officers with responsibility for the planning and conduct of cargo operations shall ensure that such operations are conducted safely through the control of the specific risks, including when non-ship's personnel are involved."



Scanned by CamScanner

# PART B

# RECOMMENDED GUIDANCE REGARDING PROVISIONS OF THE STCW CONVENTION AND ITS ANNEX

## CHAPTER VIII

## Guidance regarding watchkeeping

### Section B-VIII/1
### Guidance regarding fitness for duty

Prevention of fatigue

1 In observing the rest period requirements, "overriding operational conditions" should be construed to mean only essential shipboard work which cannot be delayed for safety or environmental reasons or which could not reasonably have been anticipated at the commencement of the voyage.

2 Although there is no universally accepted technical definition of fatigue, everyone involved in ship operations should be alert to the factors which can contribute to fatigue, including, but not limited to, those identified by the Organization*, and take them into account when making decisions on ship operations.

3 In applying regulation VIII/1, the following should be taken into account:

.1 provisions made to prevent fatigue should ensure that excessive or unreasonable overall working hours are not undertaken. In particular, the minimum rest periods specified in section A-VIII/1 should not be interpreted as implying that all other hours may be devoted to watchkeeping or other duties;

.2 the frequency and length of leave periods, and the granting of compensatory leave, are material factors in preventing fatigue from building up over a period of time; and

.3 the provisions may be varied for ships on short sea voyages, provided special safety arrangements are put in place.

4 Exceptions provided for in section A-VIII/1, paragraph 9, should be construed to mean the *exceptions laid down* by the ILO Convention on Seafarers' Hours of Work and the Manning of Ships, 1996 (No.180) or the Maritime Labour Convention, 2006, when it enters into force. The circumstances under which such exceptions are applied should be defined by the Parties.

5 Based on information received as a result of investigating maritime casualties, Administrations should keep their provisions on prevention of fatigue under review.

* See the annex to IMO Assembly resolution A.772(18) on Fatigue factors in manning and safety, paragraphs 2 to 4.4.1, and MSC/Circ.1014 on Guidance on fatigue mitigation and management.



Scanned by CamScanner

**Prevention of drug and alcohol abuse**

6 Drug and alcohol abuse directly affect the fitness and ability of a seafarer to perform watchkeeping duties or duties that involve designated safety, prevention of pollution and security duties. Seafarers found to be under the influence of drugs or alcohol should not be permitted to perform watchkeeping duties or duties that involve designated safety, prevention of pollution and security duties, until they are no longer impaired in their ability to perform those duties.

7 Administrations should ensure that adequate measures are taken to prevent alcohol and drugs from impairing the ability of watchkeeping personnel and those whose duties involve designated safety, prevention of pollution and security duties, and should establish screening programmes as necessary which:

.1 identify drug and alcohol abuse;

.2 respect the dignity, privacy, confidentiality and fundamental legal rights of the individuals concerned; and

.3 take into account relevant international guidelines.

8 Companies should consider the implementation of a clearly written policy of drug and alcohol abuse prevention, including prohibition to consume alcohol within four hours prior to serving as a member of a watch either by inclusion in the company's quality-management system or by means of providing adequate information and education to the seafarers.

9 Those involved in establishing drug and alcohol abuse prevention programmes should take into account the guidance contained in the ILO publication Drug and Alcohol Prevention Programmes in the Maritime Industry (A Manual for Planners)*, as may be amended.

**Section B-VIII/2**
**Guidance regarding watchkeeping arrangements and principles to be observed**

1 The following operational guidance should be taken into account by companies, masters and watchkeeping officers.

**PART 1 – GUIDANCE ON CERTIFICATION**
**(No provisions)**

**PART 2 – GUIDANCE ON VOYAGE PLANNING**
**(No provisions)**

**PART 3 – WATCHKEEPING PRINCIPLES IN GENERAL**
**(No provisions)**

**PART 4 – GUIDANCE ON WATCHKEEPING AT SEA**

**Part 4-1 – Guidance on keeping a navigational watch**

* Annex III of this manual includes Guiding Principles on Drug and Alcohol Testing procedures for worldwide application in maritime industry. These guiding principls were adopted by the Joint ILO/WHO Committee on the Health of Seafarers (May 1993).



Scanned by CamScanner

**Introduction**

2 Particular guidance may be necessary for special types of ships as well as for ships carrying hazardous, dangerous, toxic or highly flammable cargoes. The master should provide this operational guidance as appropriate.

3 It is essential that officers in charge of the navigational watch appreciate that the efficient performance of their duties is necessary in the interests of the safety of life and property at sea and of preventing pollution of the marine environment.

**Anchor watch**

4 The master of every ship at an unsheltered anchorage, at an open roadstead or any other virtually "at sea" conditions in accordance with chapter VIII, section A-VIII/2, part 4-1, paragraph 51 of the STCW Code, should ensure that watchkeeping arrangements are adequate for maintaining a safe watch at all times. A deck officer should at all times maintain responsibility for a safe anchor watch.

5 In determining the watchkeeping arrangements, and commensurate with maintaining the ship's safety and security and the protection of the marine environment, the master should take into account all pertinent circumstances and conditions such as:

.1 maintaining a continuous state of vigilance by sight and hearing as well as by all other available means;

.2 ship-to-ship and ship-to-shore communication requirements;

.3 the prevailing weather, sea, ice and current conditions;

.4 the need to continuously monitor the ship's position;

.5 the nature, size and characteristics of anchorage;

.6 traffic conditions;

.7 situations which might affect the security of the ship;

.8 loading and discharging operations;

.9 the designation of stand-by crew members; and

.10 the procedure to alert the master and maintain engine readiness.

**Part 4-2 – Guidance on keeping an engineering watch**

6 Particular guidance may be necessary for special types of propulsion systems or ancillary equipment and for ships carrying hazardous, dangerous, toxic or highly flammable materials or other special types of cargo. The chief engineer officer should provide this operational guidance as appropriate.

7 It is essential that officers in charge of the engineering watch appreciate that the efficient performance of engineering watchkeeping duties is necessary in the interest of the safety of life and property at sea and of preventing pollution of the marine environment.



Scanned by CamScanner

8 The relieving officer, before assuming charge of the engineering watch, should:

.1 be familiar with the location and use of the equipment provided for the safety of life in a hazardous or toxic environment;

.2 ascertain that materials for the administration of emergency medical first aid are readily available, particularly those required for the treatment of burns and scalds; and

.3 when in port, safely anchored or moored, be aware of:

.3.1 cargo activities, the status of maintenance and repair functions and all other operations affecting the watch, and

.3.2 the auxiliary machinery in use for passenger or crew accommodation services, cargo operations, operational water supplies and exhaust systems.

**Part 4-3 – Guidance on keeping a radio watch**
**General**

9 Among other things, the Radio Regulations require that each ship radio station is licensed, is under the ultimate authority of the master or other person responsible for the ship and is only operated under the control of adequately qualified personnel. The Radio Regulations also require that a distress alert shall only be sent on the authority of the master or other person responsible for the ship.

10 The master should bear in mind that all personnel assigned responsibility for sending a distress alert must be instructed with regard to, be knowledgeable of, and be able to operate properly all radio equipment on the ship, as required by regulation I/14, paragraph 1.5. This should be recorded in the deck or radio log-book.

**Watchkeeping**

11 In addition to the requirements concerning radio watchkeeping, the master of every seagoing ship should ensure that:

.1 the ship's radio station is adequately manned for the purpose of exchanging general communications – in particular public correspondence, taking into account the constraints imposed by the duties of those authorized to operate it; and

.2 the radio equipment provided on board and, where fitted, the reserve sources of energy are maintained in an efficient working condition.

12 Necessary instruction and information on use of radio equipment and procedures for distress and safety purposes should be given periodically to all relevant crew members by the person designated in the muster list to have primary responsibility for radiocommunications during distress incidents. This should be recorded in the radio log.

13 The master of every ship not subject to the SOLAS Convention should require that radio watchkeeping is adequately maintained as determined by the Administration, taking into account the Radio Regulations.



Scanned by CamScanner

14 Prior to sailing, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should ensure that:

.1 all distress and safety radio equipment and the reserve source of energy are in an efficient working condition, and that this is recorded in the radio log;

.2 all documents required by international agreement, notices to ship radio stations and additional documents required by the Administration are available and are corrected in accordance with the latest supplements, and that any discrepancy is reported to the master;

.3 the radio clock is correctly set against standard time signals;

.4 antennae are correctly positioned, undamaged and properly connected; and

.5 to the extent practicable, routine weather and navigational warning messages for the area in which the ship will be navigating are updated together with those for other areas requested by the master, and that such messages are passed to the master.

15 On sailing and opening the station, the radio operator on watch should:

.1 listen on the appropriate distress frequencies for any possible existing distress situation; and

.2 send a traffic report (name, position and destination, etc.) to the local coast station and any other appropriate coast station from which general communications may be expected.

16 While the station is open, the radio operator on watch should:

.1 check the radio clock against standard time signals at least once a day;

.2 send a traffic report when entering and on leaving the service area of a coast station from which general communications might be expected; and

.3 transmit reports to ship reporting systems in accordance with the instructions of the master.

17 While at sea, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should ensure the proper functioning of:

.1 the digital selective calling (DSC) distress and safety radio equipment by means of a test call at least once each week; and

.2 the distress and safety radio equipment by means of a test at least once each day but without radiating any signal.

The results of these tests should be recorded in the radio log.



Scanned by CamScanner

18 The radio operator designated to handle general communications should ensure that an effective watch is maintained on those frequencies on which communications are likely to be exchanged, having regard to the position of the ship in relation to those coast stations and to coast earth stations from which traffic may be expected. When exchanging traffic, radio operators should follow the relevant ITU recommendations.

19 When closing the station on arrival at a port, the radio operator on watch should advise the local coast station and other coast stations with which contact has been maintained of the ship's arrival and of the closing of the station.

20 When closing the radio station, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should:

.1 ensure that transmitting antennae are earthed; and

.2 check that the reserve sources of energy are sufficiently charged.

**Distress alerts and procedures**

21 The distress alert or distress call has absolute priority over all other transmissions. All stations which receive such signals are required by the Radio Regulations to immediately cease all transmissions capable of interfering with distress communications.

22 In the case of a distress affecting own ship, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should immediately assume responsibility for following the procedures of the Radio Regulations and relevant ITU-R Recommendations.

23 On receiving a distress alert:

.1 the radio operator on watch should alert the master and, if appropriate, the radio operator designated as having primary responsibility for radiocommunications during distress incidents; and

.2 the radio operator designated as having primary responsibility for radiocommunications during distress incidents should evaluate the situation and immediately assume responsibility for following the procedures of the Radio Regulations and relevant ITU-R Recommendations.

**Urgency messages**

24 In cases of urgency affecting own ship, the radio operator designated as having responsibility for radiocommunications during distress incidents should immediately assume responsibility for following the procedures of the Radio Regulations and relevant ITU-R Recommendations.

25 In cases of communications relating to medical advice, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should follow the procedures of the Radio Regulations and adhere to the conditions as published in the relevant international documentation (see paragraph 14.2) or as specified by the satellite service provider.



Scanned by CamScanner

26 In cases of communications relating to medical transports, as defined in the Protocol additional to the Geneva Conventions of 12 August 1949, and relating to the protection of victims of international armed conflicts (Protocol I), the radio operator designated as having primary responsibility for radiocommunication during distress incidents should follow the procedures of the Radio Regulations.

27 On receiving an urgency message, the radio operator on watch should alert the master and, if appropriate, the radio operator designated as having primary responsibility for radiocommunications during distress incidents.

**Safety messages**

28 When a safety message is to be transmitted, the master and the radio operator on watch should follow the procedures of the Radio Regulations.

29 On receiving a safety message, the radio operator on watch should note its content and act in accordance with the master's instructions.

30 Bridge-to-bridge communications should be exchanged on VHF channel 13. Bridge-to-bridge communications are described as "Intership Navigation Safety Communications" in the Radio Regulations.

**Radio records**

31 Additional entries in the radio log should be made in accordance with paragraphs 10, 12, 14, 17 and 33.

32 Unauthorized transmissions and incidents of harmful interference should, if possible, be identified, recorded in the radio log and brought to the attention of the Administration in compliance with the Radio Regulations, together with an appropriate extract from the radio log.

**Battery maintenance**

33 Batteries providing a source of energy for any part of the radio installation, including those associated with uninterrupted power supplies, are the responsibility of the radio operator designated as having primary responsibility for radiocommunications during distress incidents and should be:

.1 tested on-load and off-load daily and, where necessary, brought up to the fully charged condition;

.2 tested once per week by means of a hydrometer where practicable, or, where a hydrometer cannot be used, by a suitable load test; and

.3 checked once per month for the security of each battery and its connections and the condition of the batteries and their compartment or compartments.

The results of these tests should be recorded in the radio log.

**PART 5 – GUIDANCE ON WATCHKEEPING IN PORT**

(No provisions)"



Scanned by CamScanner

# COLLISION AVOIDANCE RULES

| PART-A (GENERAL) | PART-B (STEERING & SAILING RULES) | PART-C (LIGHT & SHAPES) | PART-D (SOUND & LIGHT SIGNALS) | PART-E (EXEMPTIONS) | PART-F (Verification of compliance) | Annexes I to IV |
|---|---|---|---|---|---|---|
| RULES 1 TO 3 | RULES 4 TO 19 | RULES 20 TO 31 | RULES 32 TO 37 | RULES 38 | RULES 39 TO 41 | |

CONDUCT OF VESSELS FOR ALL COLLISION AVOIDANCE ACTIONS ARE GOVERNED UNDER PART B

**SECTION I: RULES 4 TO 10**
**IN ANY CONDITION OF VISIBILITY**
4 - APPLICATION
5 - LOOK-OUT
6 - SAFE SPEED
7 - RISK OF COLLISION
8 - ACTION TO AVOID COLLISION
9 - NARROW CHANNELS
10 - TRAFFIC SEPARATION SCHEMES

**SECTION II: RULES 11 TO 18**
**IN SIGHT OF ONE ANOTHER**
11 - APPLICATION
12 - SAILING VESSELS
13 - OVERTAKING
14 - HEAD-ON SITUATION
15 - CROSSING SITUATION
16 - ACTION BY GIVE-WAY VESSEL
17 - ACTION BY STAND-ON VESSEL
18 - RESPONSIBILITIES BETWEEN VESSELS

**SECTION III: RULES 19**
**IN RESTRICTED VISIBILITY**
19 - CONDUCT OF VESSELS IN RESTRICTED VISIBILITY

(Not In Sight of One Another & Navigating In Or Near An Area Of Restricted Visibility)

**Published by :**
**Capt. V. K. Bhandarkar**
**Bhandarkar Publications,**
*10, Hammersmith, Industrial Premises, S. T. Road, Mumbai-400 016*
*Tel. 2444 4248, 4076 4200 (100 lines), Fax: 2444 4250*
*www.bhandarkarpub.com*

Scanned by CamScanner